



# Profile of the UK Mineral Products Industry

2018 Edition

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Welcome to our 2018 edition of The Profile of the UK Mineral Products Industry.

This is now the 4<sup>th</sup> edition of this publication, each of which we have looked to continuously improve. This review celebrates

the diversity of the mineral products industry and brings out its essential role as an enabling industry for others to thrive on. The industry supplies the materials for building our homes, as well as the vital new and upgraded infrastructure to support future economic growth. We are playing our part in the transition to a low carbon and more circular economy, but primary resources will continue to form the major element of the supply.

This publication provides readers with a unique source of information on the Mineral Products Industry, including the latest statistics, to illustrate the changing patterns in the way we produce and consume our minerals and the manufactured products derived from them. As Government reduces support for data collection and consolidation relating to our minerals, the MPA data will increasingly help fill the gap.

We have also taken the opportunity to review the extent to which our industry contributes to the wider economy. The industry provides essential raw and manufactured mineral products to other industries, including construction to which we are the largest suppliers. It directly employs 74,000 people at over 2,000 active sites and plants, and supports an additional 3.5 million jobs throughout the supply chain.

I very much hope that you find this issue interesting, and I should welcome your feedback.

## **Nigel Jackson**

Chief Executive

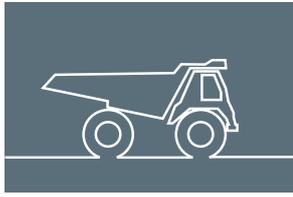
Mineral Products Association

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### **MPA Agenda**

- Economic conditions that support investment
- Better Government support for an essential industry
- A reasonable "licence to operate"
- Proportionate legislation and regulation
- Recognition of progress

# 1 At a glance (2016)



**390Mt**

GB production of aggregates and manufactured mineral products



**4 times**

The volume of energy minerals produced in the UK including oil, gas and coal



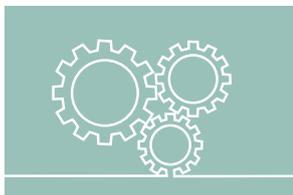
**£18bn**

Annual turnover for the Minerals and Mineral Products Industry



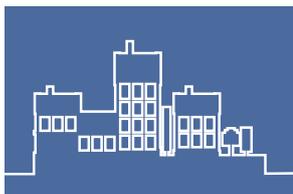
**£6.8bn**

Gross value added generated by the industry



**£513bn**

Annual turnover of the industries we supply



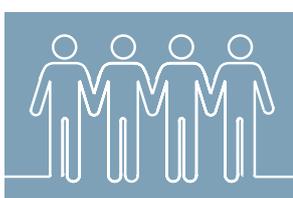
**£152bn**

Value of construction output, our main customer



**74,000**

People employed in the industry



**3.5m**

Jobs supported in our supply chain

## 1.a: Mineral and mineral product sales in GB, 2016.

(unless otherwise stated)

### Construction uses

<b>Aggregates</b>		<b>247.0Mt</b>
of which:	Crushed Rock	113.9Mt
	Sand & gravel - land won	48.6Mt
	Sand & gravel - marine	14.1Mt
	Recycled & secondary	70.4Mt

<b>Cementitious<sup>(a)</sup></b>		<b>15.0Mt</b>
of which:	Cement	12.0Mt
	Other cementitious materials (Fly ash, GGBS)	3.0Mt

<b>Ready-Mixed Concrete<sup>(b)</sup></b>	<b>56.1Mt</b>
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<b>Concrete products</b>	<b>25.8Mt</b>
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<b>Asphalt</b>	<b>25.2Mt</b>
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<b>Dimension Stone<sup>(c)</sup></b>	<b>1.0Mt</b>
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### Non-construction uses

<b>Rock<sup>(c)</sup></b>		<b>14.9Mt</b>
of which:	Industrial Lime	1.0Mt
	Agricultural Lime <sup>(c)</sup>	1.6Mt

<b>Industrial Sand</b>	<b>2.8Mt</b>
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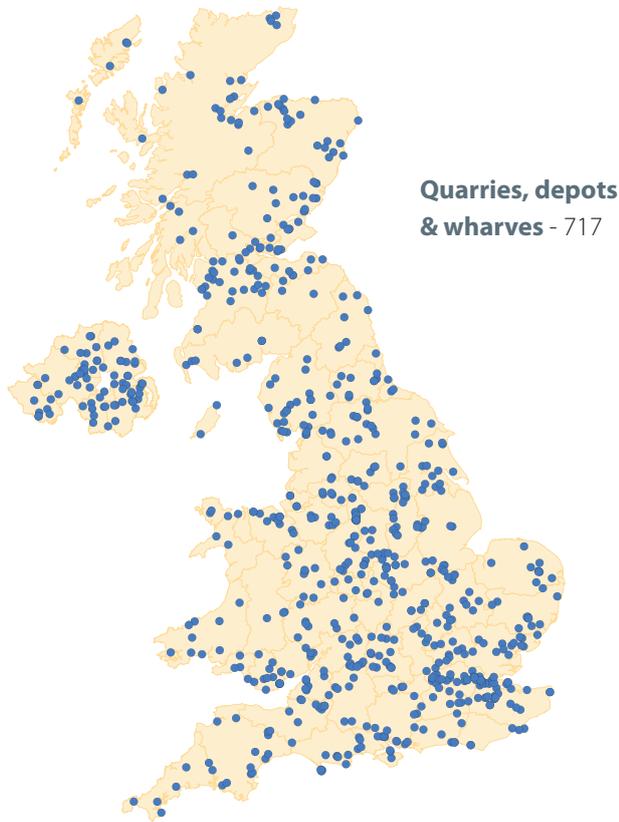
<b>TOTAL</b>	<b>387.9Mt</b>
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<sup>(a)</sup> Includes Northern Ireland.

<sup>(b)</sup> Converted using 2.38 tonnes per cubic metre of ready-mixed concrete.

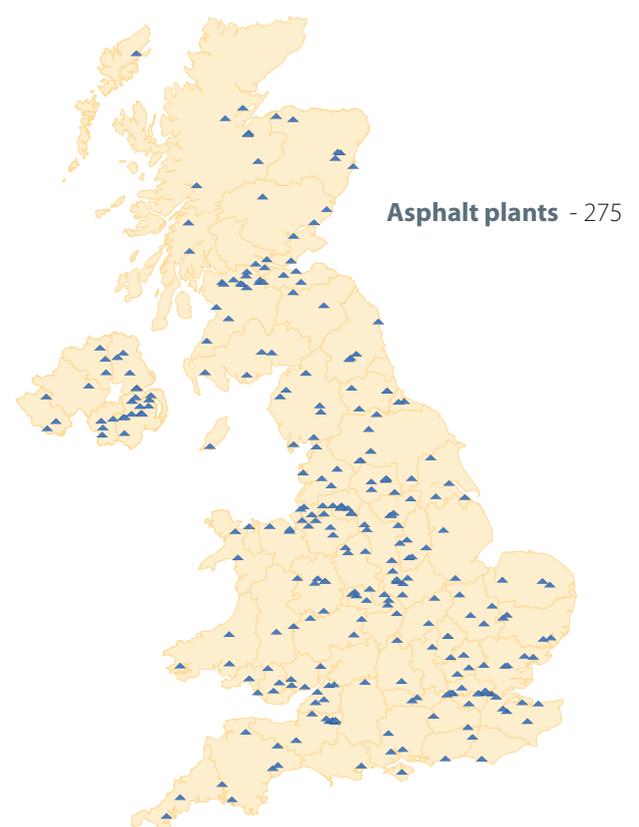
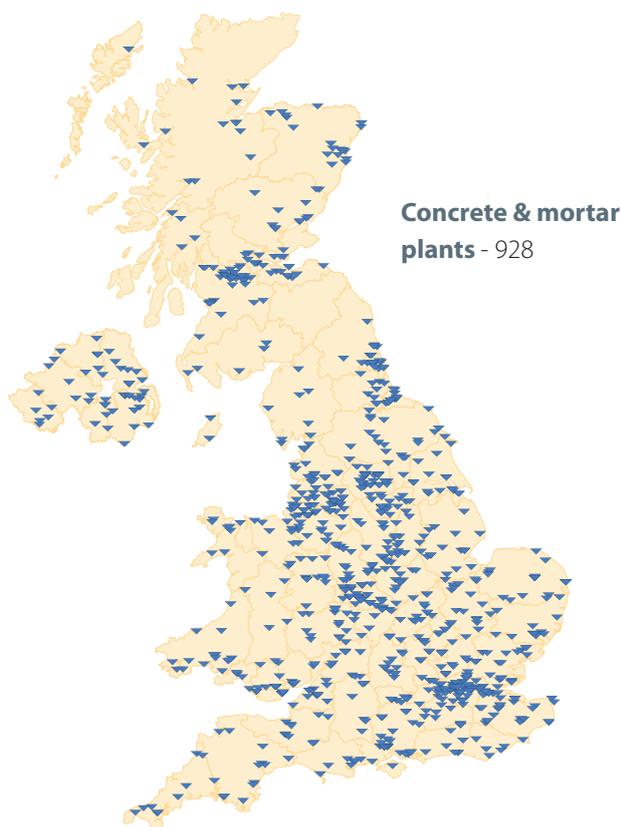
<sup>(c)</sup> 2014.

# Locations of MPA member active sites and plants in 2018



1.b: **Number of MPA member active sites and plants in 2018.** Source: MPA.

Crushed rock quarries	252
Sand & gravel quarries	253
Depots or wharves	141
Railheads	21
Recycling plants	97
Cement quarries and plants	18
Ready-mixed concrete plants	878
Precast concrete plants	164
Lime quarries	8
Asphalt plants	275
Mortar plants	50
Dimension stone quarries	42
Silica sand quarries	21
Slag plants	5



# 2 An essential industry

## 2.1 Mineral production

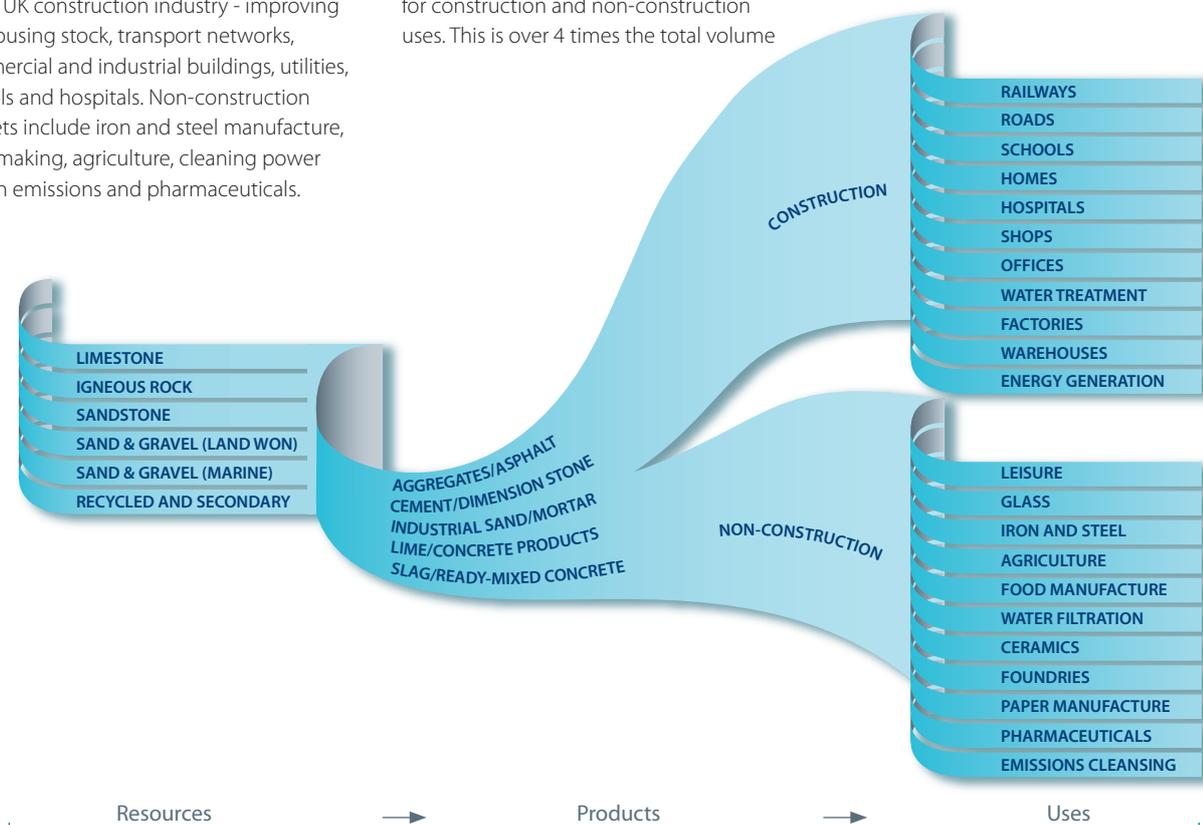
The Mineral Products Industry is a vital enabling sector of the UK economy, which has a broad impact on overall economic activity. As the largest element of the construction supply chain, a supplier of key materials to many other industries, and the largest material flow in the UK economy, a healthy domestic Mineral Products Industry is essential for the UK.

The majority of the industry's output is used in the UK construction industry - improving our housing stock, transport networks, commercial and industrial buildings, utilities, schools and hospitals. Non-construction markets include iron and steel manufacture, glass making, agriculture, cleaning power station emissions and pharmaceuticals.

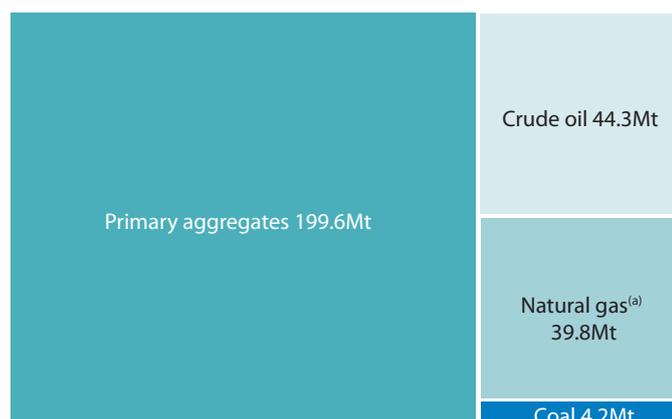
Table 1.a (page 1) shows that in 2016 about 177 million tonnes of primary aggregates were produced in Great Britain, to which the industry adds another 70 million tonnes of recycled and secondary aggregates, and just over 140 million tonnes of other raw minerals and manufactured mineral products such as cement, concrete and asphalt. As a result, there were about 390 million tonnes of aggregates and other manufactured mineral products produced in Great Britain for construction and non-construction uses. This is over 4 times the total volume

of energy minerals, including oil, gas and coal that were produced in the UK.

These materials are mostly used in construction and manufacturing, underpinning every activity of the economy by supplying vital raw materials at the heart of UK growth. International trade in minerals and mineral products is limited with, for instance, domestic sources supplying about 85% of the cement market.



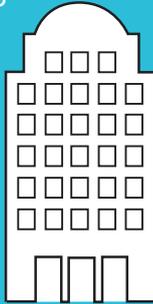
2.1a: UK production of primary aggregates and energy minerals, 2016. Source: BEIS (2017), BGS (2016), ONS (AMRI), QPANI, MPA.



<sup>(a)</sup> Million tonnes of oil equivalent (Mtoe). 1 GWh = 8.6\*10<sup>(-5)</sup> Mtoe.

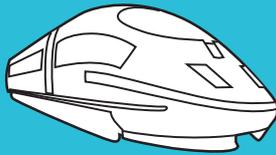
6 storey city centre office building

**16,480 tonnes of concrete**



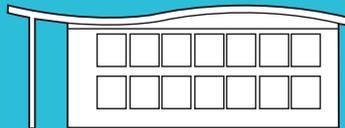
Typical home

**12 tonnes of mortar**  
**200 tonnes of aggregates**



HS2

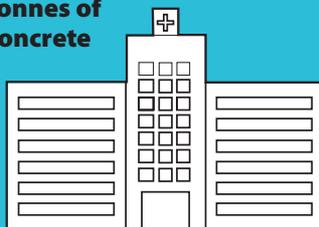
**25mt of aggregates/minerals**



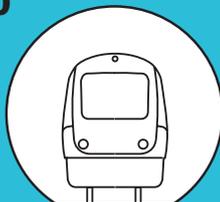
School **15,000 tonnes of concrete**

Community hospital

**53,000 tonnes of concrete**



Crossrail  
**250,000 concrete segments**

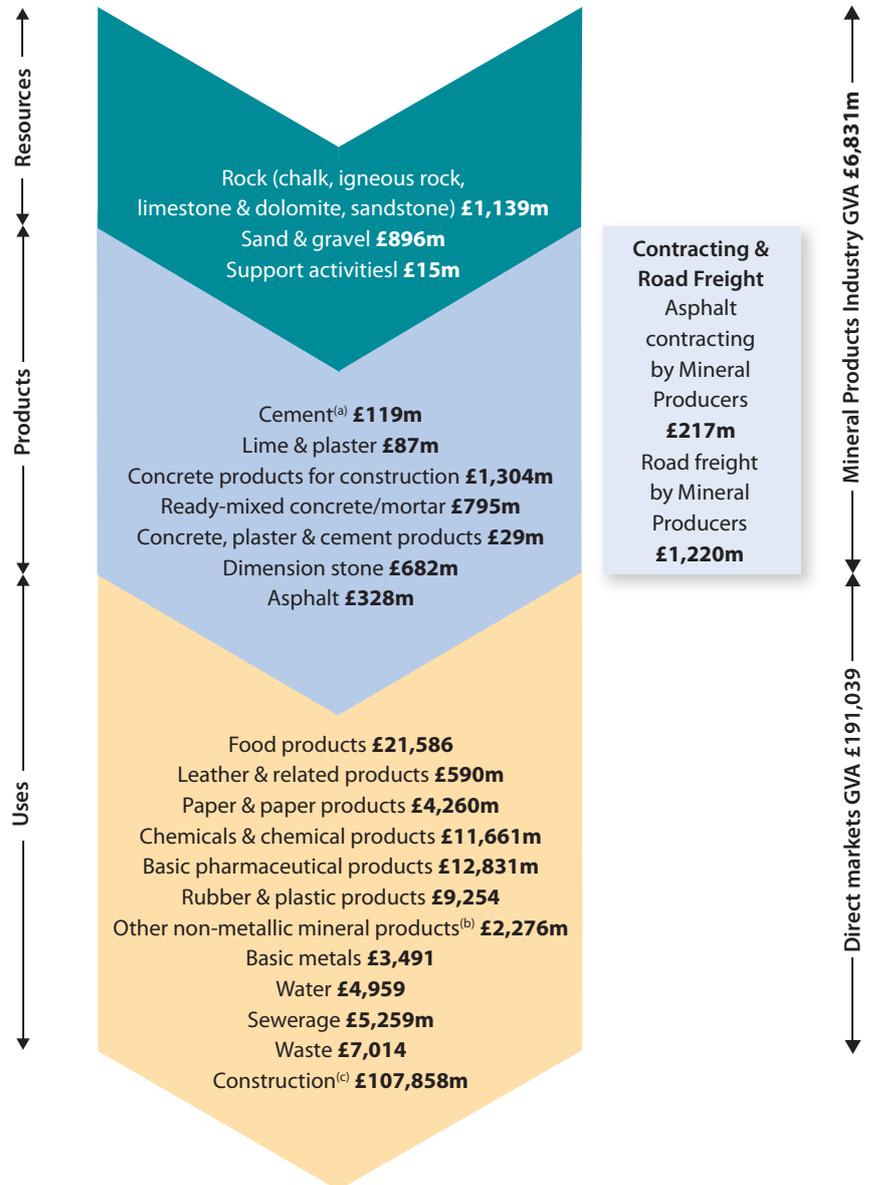


## 2.2 Gross Value Added (GVA)

The Mineral Products Industry is defined as the extraction of mineral resources, i.e. sand & gravel, dimension stone, limestone, igneous rocks, sandstone and silica sand, and their processing and manufacture into asphalt, cement, concrete (both ready-mixed and precast), lime, mortar and slag. It also includes a share of road freight activities, as mineral producers deliver most of their materials by road, as well as some road contracting work when asphalt producers lay the asphalt themselves.

Based on this definition, MPA estimates that the Mineral Products Industry directly contributed to the UK economy by generating over £6.8bn in GVA in 2016, up from £6.3bn in 2015 (figure 2.2a). This was comparable to the creative industry, and greater than programming and broadcasting activities or information service activities (figure 2.2b). The Mineral Products Industry had a turnover of over £18bn in 2016, and contributed to the £513bn turnover in industries downstream of the supply chain.

2.2a: **GVA of the Mineral Products Industry in the UK, 2016.** Source: ONS (2017a, 2018c), BGS (2016), MPA calculations.

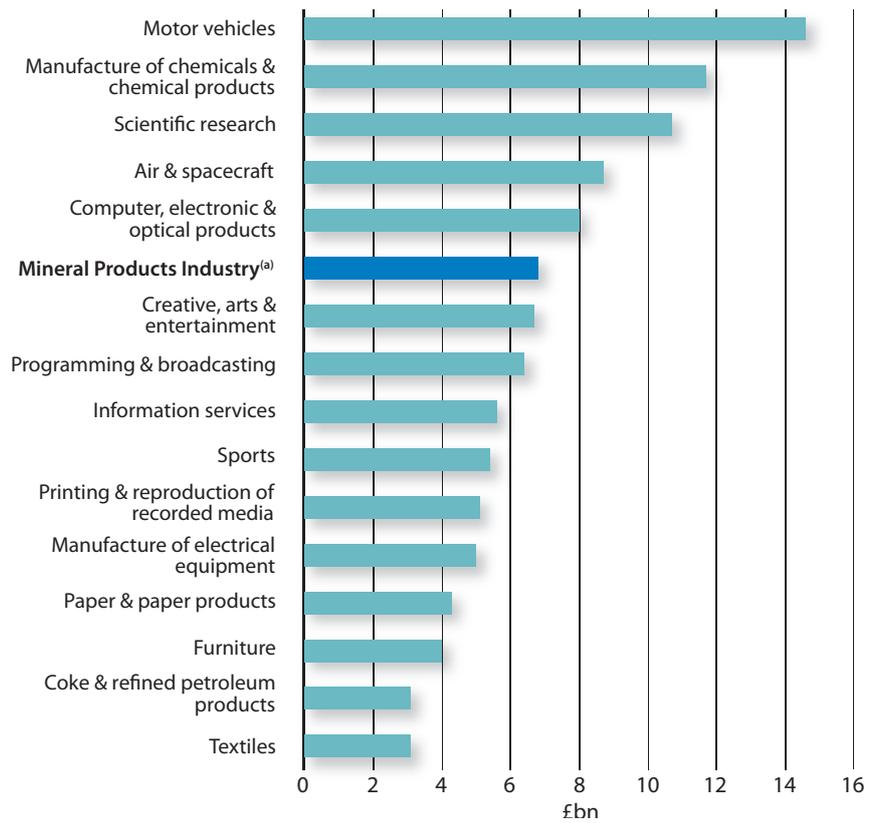


<sup>(a)</sup> MPA believes the ONS estimate for the cement industry's GVA understates the industry's actual GVA. The 2014 GVA for the cement industry is estimated by MPA to be around £355m.

<sup>(b)</sup> Excludes minerals covered by MPA membership, which are included in the manufacturing stage of the supply chain.

<sup>(c)</sup> Excludes asphalt contracting work carried out by the mineral producers.

2.2b: **GVA of selected industries in the UK, 2016.** Source: ONS (2018c), MPA.

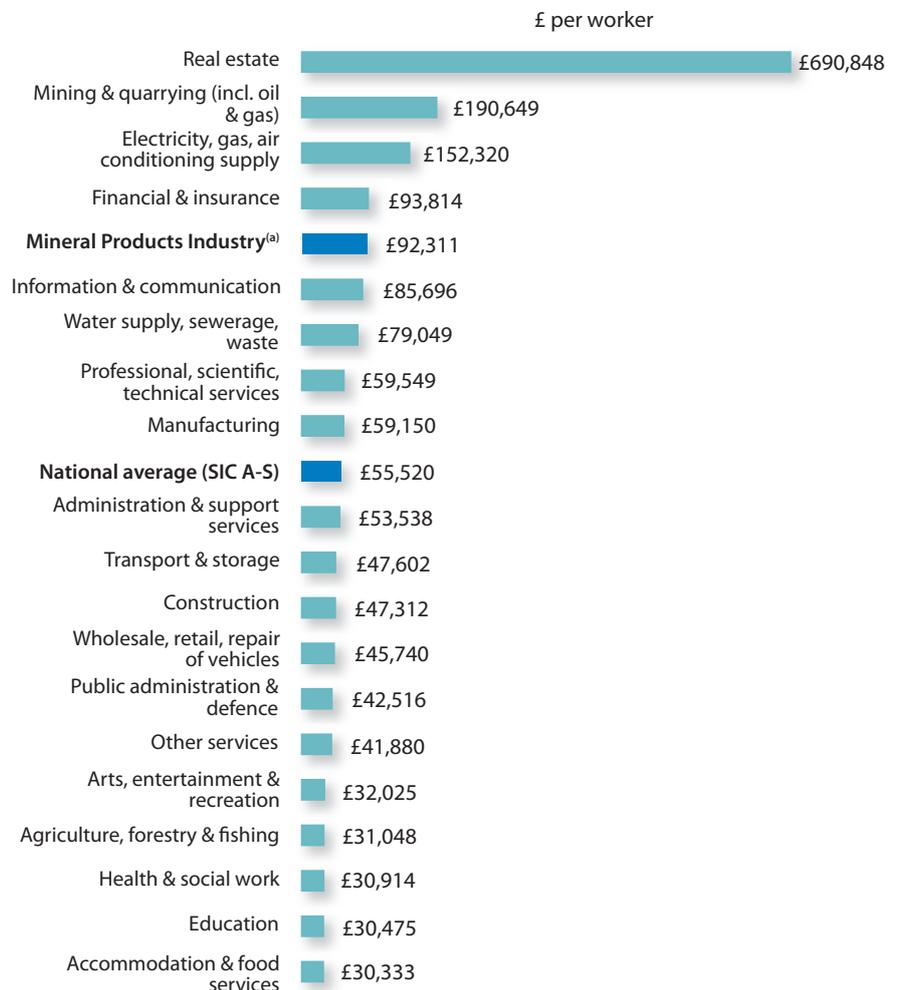


<sup>(a)</sup> This is not an official ONS Standard Industrial Classification (SIC), but reflects MPA members' activities.

### 2.3 Productivity

Whilst directly employing 74,000 people and supporting 3.5 million jobs through its supply chain in 2016, the Mineral Products Industry is also a highly productive industry: each worker produced about £92,000 in 2016, equivalent to 1.7 times the national average of value added (figure 2.3a).

2.3a: **UK productivity by industry, 2016.** Source: ONS (2017a, 2017b), MPA.



<sup>(a)</sup> This is not an official ONS Standard Industrial Classification (SIC), but reflects MPA members' activities.

# 3 Mineral product profiles

## 3.1 Aggregates (crushed rock, sand & gravel)



Within aggregates, the major supply tonnage is crushed rock with significant contributions from sand & gravel, recycled and secondary materials. The sand & gravel supply comprises both land-won and marine dredged materials. This broad breakdown disguises the fact that

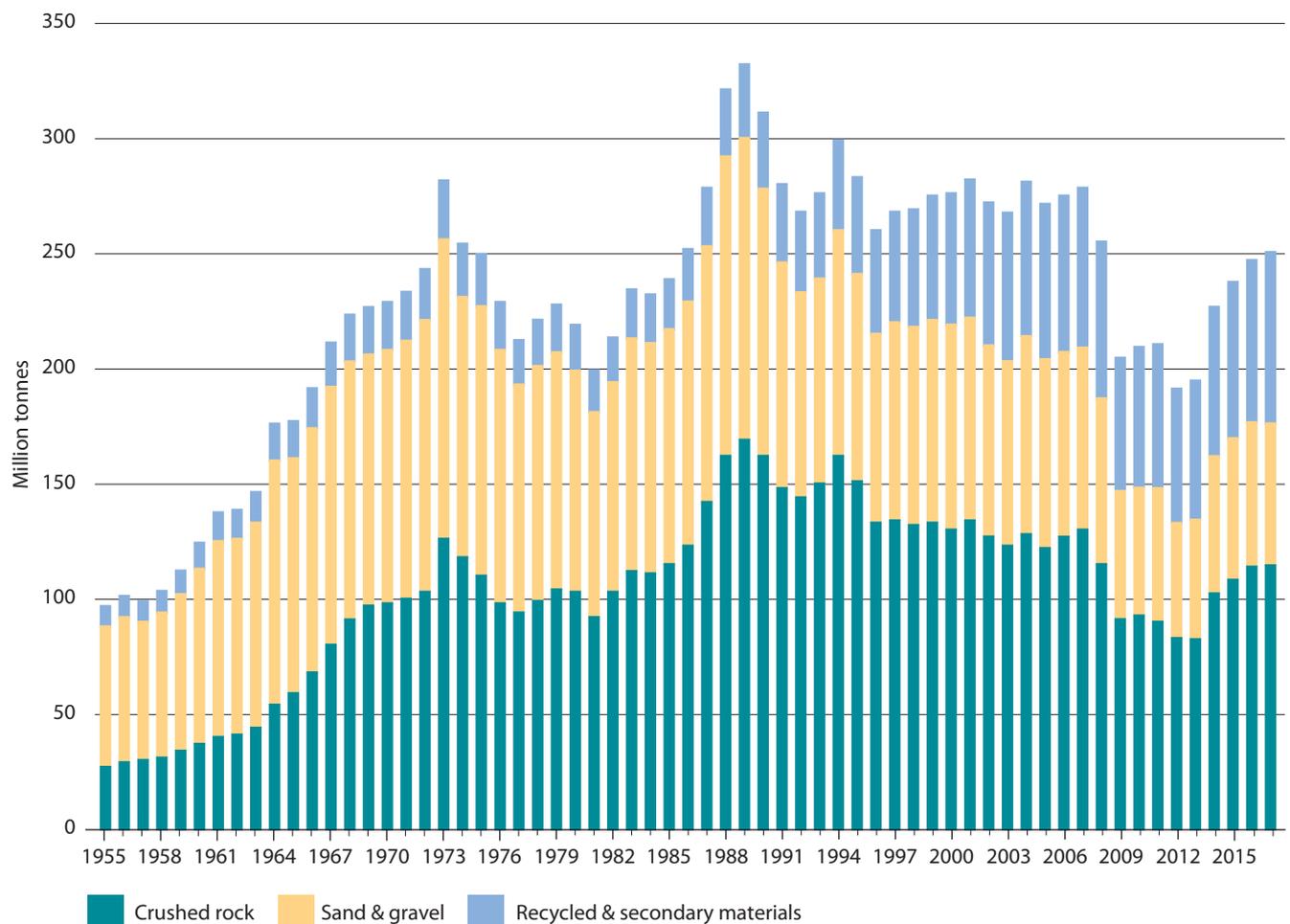
local and regional markets may be highly dependent on a particular type or source of aggregate as a consequence of the physical availability of particular resource types and/or the market demand for particular products.

Over the last 60 years, there have been some variations in the relative importance of the different sources of aggregates, most notably the increase in the supply of recycled and secondary materials evident since the early 1990s (figure 3.1a). Aggregate sales have been depressed since the onset of the recession in 2008, reflecting the significant decline in construction markets, but have started to recover since mid-2013. Nonetheless, despite increasing by 29% between 2013 and 2017 as construction activity picked up, the aggregates market remains about 10% below 2007 volumes (figure 3.1a). This suggests that there remains significant scope for further

improvements in minerals products and construction markets, particularly outside London.

In 2017, marine aggregates satisfied about 23% (14 million tonnes) of the total construction needs for sand & gravel in Great Britain (figure 3.1b). Marine aggregates also support beach nourishment and contract fill projects in the UK and are also exported overseas for use in construction, although this market remains depressed compared to 2007 volumes. Total production of sand & gravel for UK construction, exports, beach nourishment and contract fill, shows that total marine aggregates production levels have been consistently lower than the total tonnage amount permitted across all operators' production licences (figure 3.1f). The difference reflects the fact that individual dredging areas can offer a variety

3.1a: **GB aggregates market by sources of supply.** Source: ONS (AMRI), BGS (AM surveys), MPA.



of materials, from fine sand to coarse gravel, so multiple licence areas in each dredging region ensure that there are enough materials for each operator to supply both current and future market needs, and also provide the industry with the flexibility to respond to any future changes in market demand that may occur. Multiple licences also ensure dredging areas are near to customers.

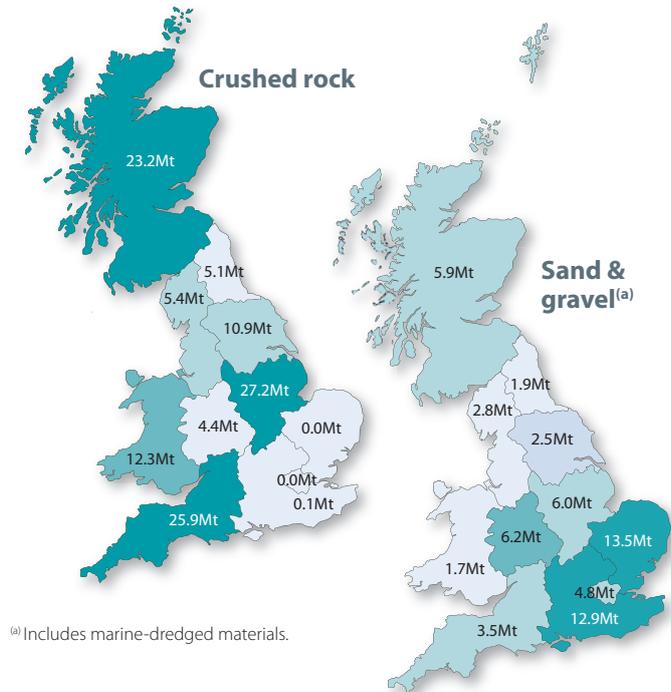
The biggest use for marine dredged aggregates is the construction market. Aggregates are a high bulk, low cost, commodity and consequently are highly sensitive to transport distances. Where local sources of aggregates are constrained, either because resources are not geologically present or because existing sources have become depleted, alternative sources of supply have to be found. Through economies of scale, marine aggregates supplies can play an important role in the overall portfolio of construction aggregate supply by transporting large volumes (2,000 -10,000 tonnes/cargo) over considerable distances and delivering them to coastal towns and cities close to where they are needed. As an example of this, in London and the South East of England, one third of all the primary aggregates consumed in construction activity come from marine sources.

Access to markets relies on the availability of suitable infrastructure to support the import of marine aggregates and crushed rock. Without the presence of suitable, unconstrained wharf and railhead facilities, the balance of supply cannot be maintained. This is why such sites should be subject to safeguard policies to protect their use, in accordance with the requirements set out in the National Planning Policy Framework.

The underlying geology of the UK determines the local availability of mineral products which are only transported long distances when necessary. However, resources are not always distributed evenly and some inter-regional movement is necessary. The South East, for example, has its own supplies of sand & gravel but relies heavily on

3.1c: GB Primary aggregates sales by region, 2017.

Source: ONS (AMRI), BGS (AM surveys), MPA.

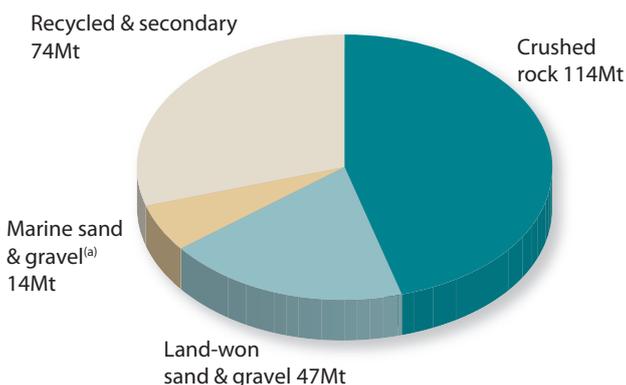


<sup>(a)</sup> Includes marine-dredged materials.

crushed rock brought in by rail from the East Midlands and South West and by sea from Scotland. It also requires marine dredged sand & gravel from coastal waters. Figure 3.1g shows the main inter-regional crushed rock and sand & gravel movements.

3.1b: Aggregates supply mix in GB, 2017.

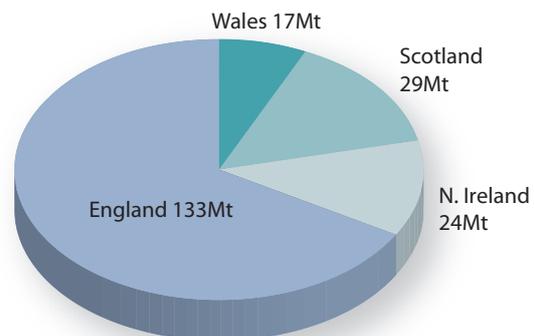
Source: The Crown Estate, BGS (AM surveys), MPA.



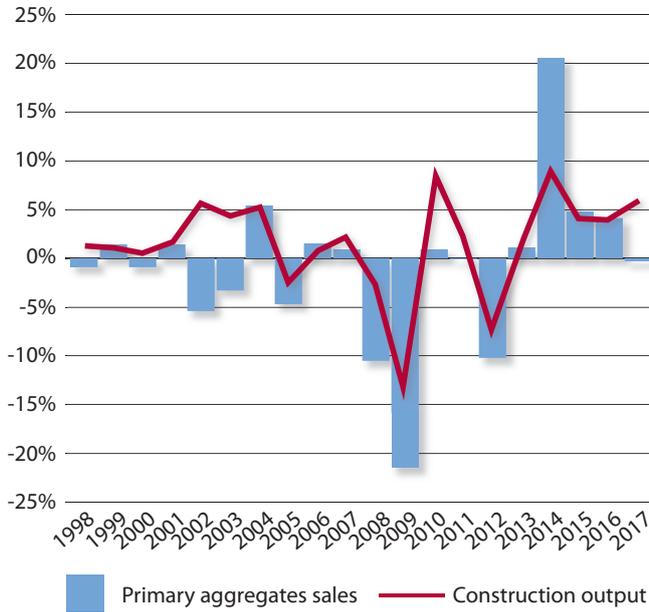
(a) Dredging does not currently occur offshore in Scotland or Northern Ireland.

3.1d: UK primary aggregates sales, 2017. Source: ONS

(AMRI), BGS (AM surveys), QPANI, MPA.

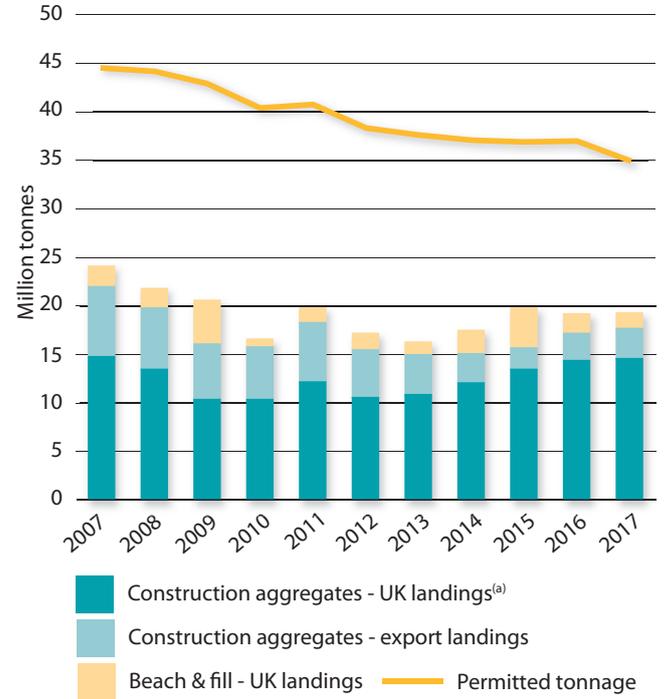


3.1e: Trends in construction activity and primary aggregates sales. Source: ONS (2018b), ONS (AMRI), BGS (AM surveys), MPA.



3.1f: UK marine sand & gravel landings. Source: The Crown Estate.

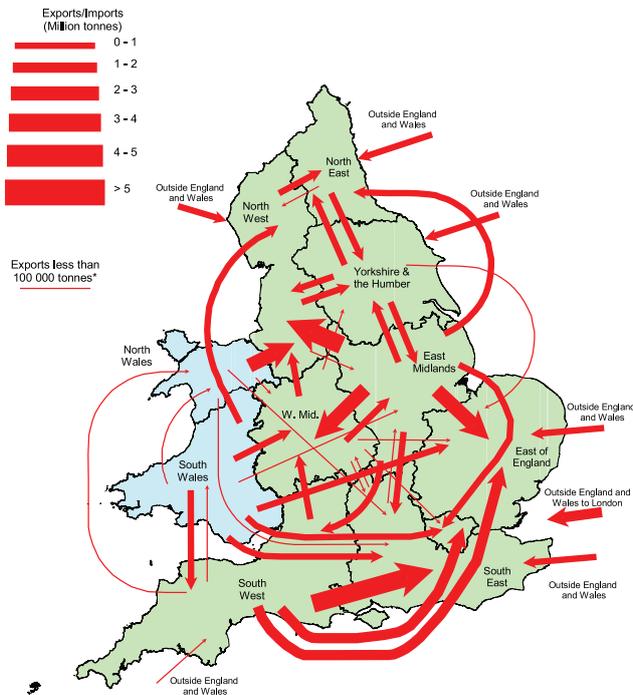
Source: The Crown Estate.



(a) Dredging does not currently occur offshore in Scotland or Northern Ireland.

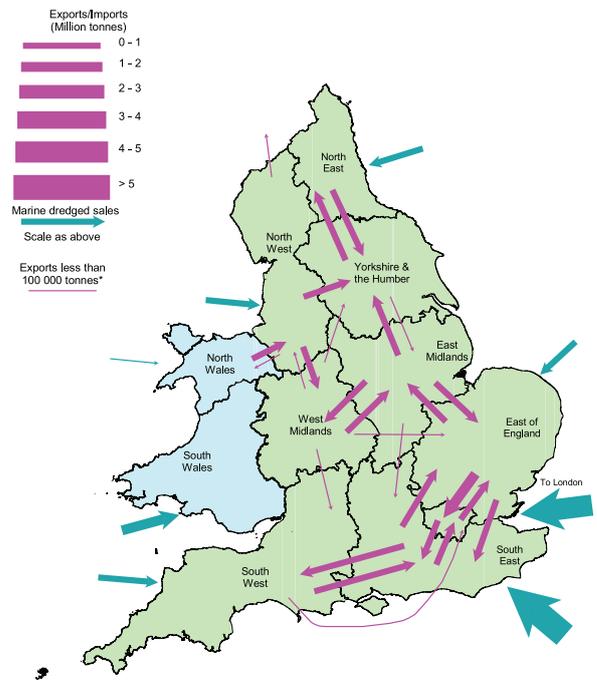
3.1g: Inter-regional flows of aggregates, 2014<sup>(a)</sup>. Source: BGS (AM surveys).

Crushed rock



\*For clarity, exports less than 25 000 tonnes are not shown.

Sand & gravel



\*For clarity, exports less than 25 000 tonnes are not shown.

(a) MPA does not hold data on regional flows. These maps are reproduced from the original source. © Crown Copyright - Collation of the results of the 2014 Aggregate Minerals survey for England and Wales.

### 3.2 Cementitious

Cement is the key component in producing ready-mixed concrete, precast concrete and mortar (figure 3.2a). Following a stable market in the early and mid-2000s, the economic recession saw cement sales drop by 34% between 2007 and 2009. Since 2012, markets have improved, but sales in 2016 remained 8% lower than in 2007.

Cement is made by crushing and heating limestone or chalk with small amounts of other natural materials, such as clay or shale, in a rotating kiln to a temperature of 1450° Celsius. This chemically combines the stones into a hard substance called clinker, essentially changing calcium carbonate (CaCO<sub>3</sub>) to calcium oxide (CaO) which then reacts with silica (SiO<sub>2</sub>) to form calcium silicates with Ferrite and Aluminate mineral formation completing the mineralogy of the clinker complex.

As well as the mineral content of the raw materials, their moisture content is an important feature. Chalk has a higher moisture content than hard limestone and this tends to come with an energy penalty for the process. As the final step in (CEM I) cement making, the clinker is ground to a powder with about 4%-5% gypsum, added to control the setting time of the end-product. Further blending occurs for the other cement types identified below.

Three main classifications of cement sold in the UK are:

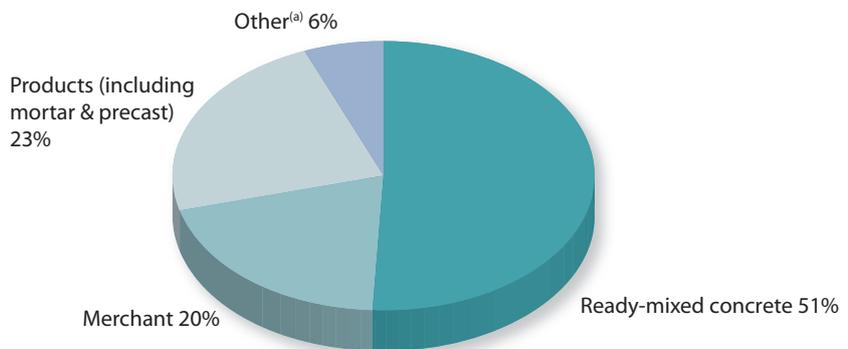
- **CEM I** – made from ground cement clinker and a small percentage of gypsum to control the material's setting time when mixed with water;
- **CEM II** – is a cement containing between 6% and 35% fly ash<sup>(1)</sup>, limestone or ground granulated blast furnace slag<sup>(2)</sup>;
- **CEM III** – is a cement containing between 36% and 95% ground granulated blast furnace slag.

There are a variety of cement products designed for specific end-uses.

<sup>(1)</sup> Fly ash is a by-product from coal fired power stations.  
<sup>(2)</sup> Blast furnace slag is a by-product of iron production and is granulated and ground for use in cement.



3.2a: MPA cement usage in the UK, 2016. Source: MPA.



<sup>(a)</sup> Includes cement that goes into soil stabilisation, special grout formulation, diaphragm wall grouts and other applications that do not fall into either ready-mixed concrete products or merchant.

3.2b: MPA cementitious sales in GB<sup>(a) (b)</sup>. Source: MPA.



<sup>(a)</sup> Includes Northern Ireland from 2015.

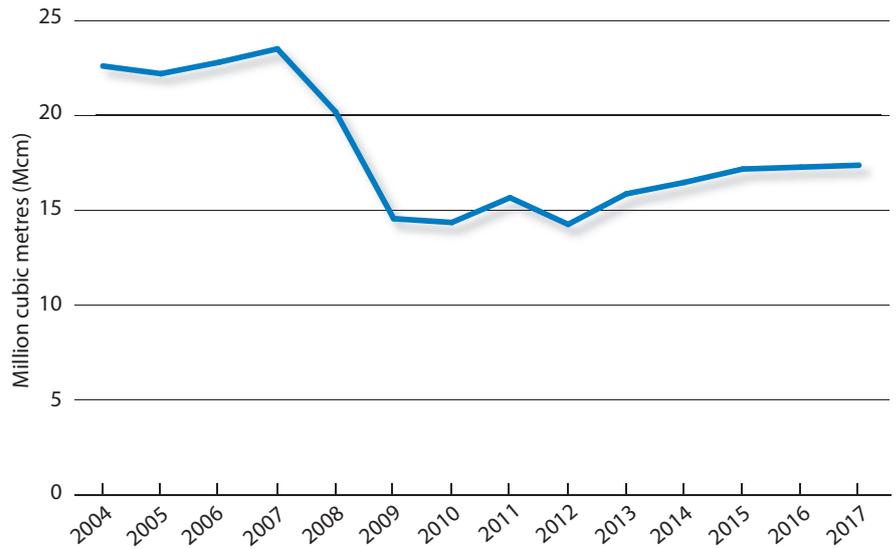
<sup>(b)</sup> Includes imports, pulverised fuel ash and granulated blast furnace slag.

### 3.3 Ready-mixed concrete



Ready-mixed concrete is an essential building material and is therefore a reliable indicator of construction activity from home building to high-rise and infrastructure. It is readily available on-demand throughout GB where the average delivery distance is 8 miles. Demand for ready-mixed concrete is closely aligned with both construction activity and the general economy. Reflecting the general economy, there continues to be nearly three times more supplied in London and the South East than in most other GB regions (figure 3.3b).

3.3a: MPA ready-mixed concrete<sup>(a)</sup> sales in GB. Source: MPA.



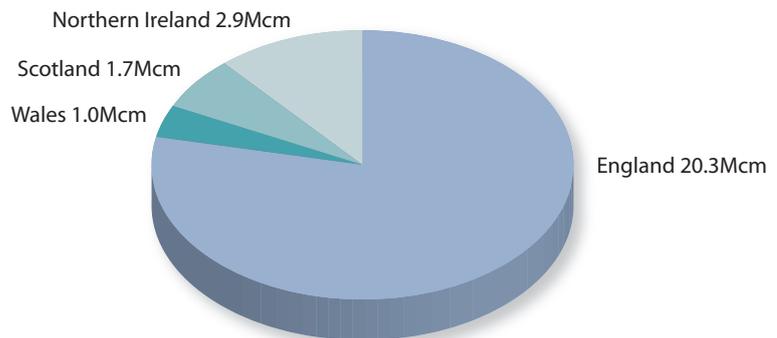
3.3b: MPA ready-mixed concrete<sup>(a)</sup> sales by region, 2017. Source: MPA.



<sup>(a)</sup> Includes ready-mixed concrete produced from fixed and site plants.

<sup>(a)</sup> Includes ready-mixed concrete produced from fixed and site plants.

3.3c: UK ready-mixed concrete<sup>(a)</sup> sales, 2017. Source: QPANI, MPA.



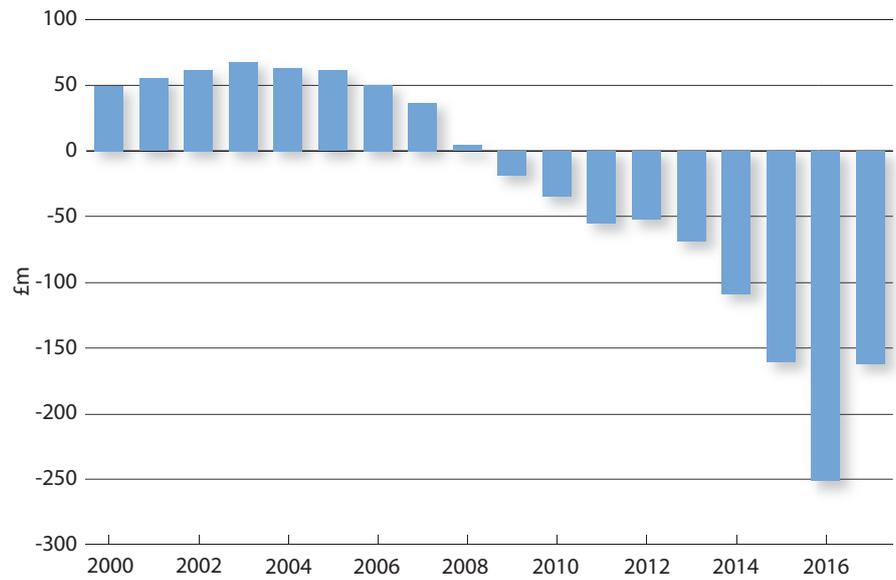
<sup>(a)</sup> Based on the assumption that MPA sales represent 75% of the total GB market. Includes fixed and site plants.

### 3.4 Precast concrete



Precast concrete includes concrete elements of any size that are cast in a factory - from blocks to bridge beams. Precast elements are fundamental to many buildings and civil engineering projects. For instance, 80% of all new roofs are made from concrete tiles, whilst concrete and masonry provide strength, thermal mass and fire protection to 85% of new homes built over the last 30 years. The market is mainly supplied from domestic sources but the chart points to the vulnerability of this sector to international

3.4a: UK concrete products trade balance. Source: ONS (2018a).



competition, as the UK has moved from a trade surplus to a trade deficit over the last 10 years. The UK has been a net importer of concrete products since 2009.

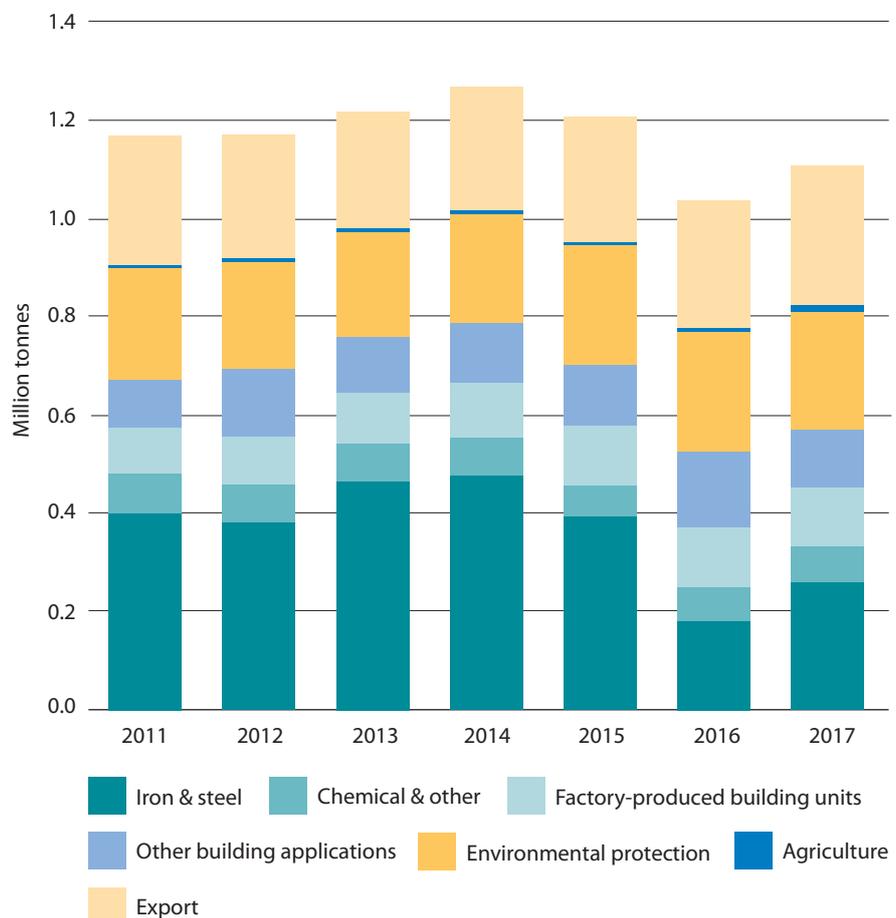
### 3.5 Lime



#### 3.5.1: Industrial lime

Many diverse industries such as steel, chemicals, glass and construction rely heavily on industrial lime. This unique and versatile mineral is also used in the production of sugar, the treatment of contaminated land, the desulphurisation of flue gases from power stations and the purification of water for human consumption. The sector makes a positive contribution to the UK trade balance, with 26% of total industrial lime sales exported in 2017 (figure 3.5a).

3.5a: Industrial lime sales by end-usage in GB. Source: MPA.



### 3.5.2: Agricultural lime



Quarried agricultural lime remains UK agriculture's principal tool in moderating the effects of climate change, excess soil acidity, and supplying essential calcium and calcium-magnesium plant nutrient. Agricultural lime plays a key role in protecting one of nature's greatest assets, the soil; maintaining a healthy, sustainable and productive environment essential to meeting the challenges of future food security. It is estimated that twice as much agricultural lime as now needs to be applied to UK farmland to prevent soil becoming too acidic.

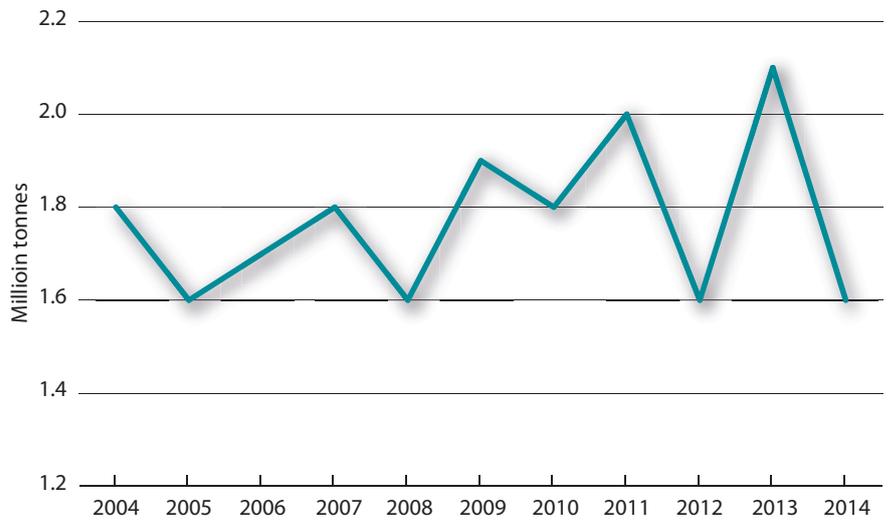
### 3.6 Asphalt



Roads are the economic and social arteries of the nation, ensuring door to door routes for delivery of goods and services. They are the primary means of access to all parts of integrated transport networks and as such, we depend upon asphalt for road construction and maintenance.

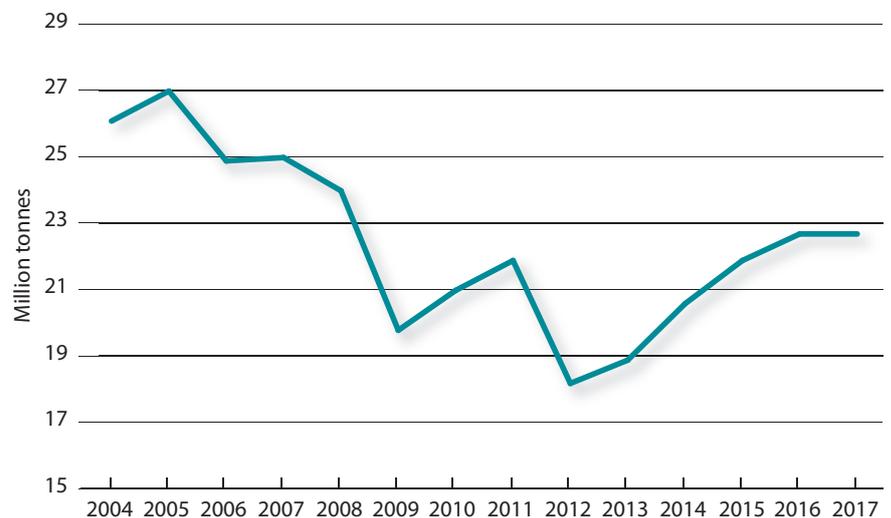
Asphalt is produced in a network of local plants, which serve both the local and national road networks. Asphalt provides sustainable solutions as it is uniquely 100% recyclable back into new asphalt, whilst delivering cost effective, safe, comfortable and quiet road surfaces. Research and innovation is striving to further enhance the durability and sustainable credentials of

3.5b: Sales of agricultural lime in GB<sup>(a)</sup>. Source: ONS (AMRI).



<sup>(a)</sup> Due to the cessation of the Annual Raised Mineral Inquiry (AMRI) survey, which used to be carried out by the Office for National Statistics, the latest statistics available only cover sales volumes up to 2014.

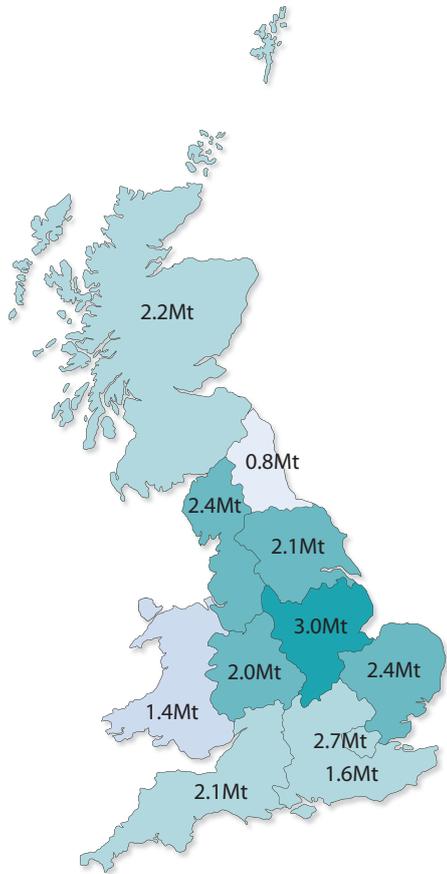
3.6a: MPA asphalt sales in GB. Source: MPA.



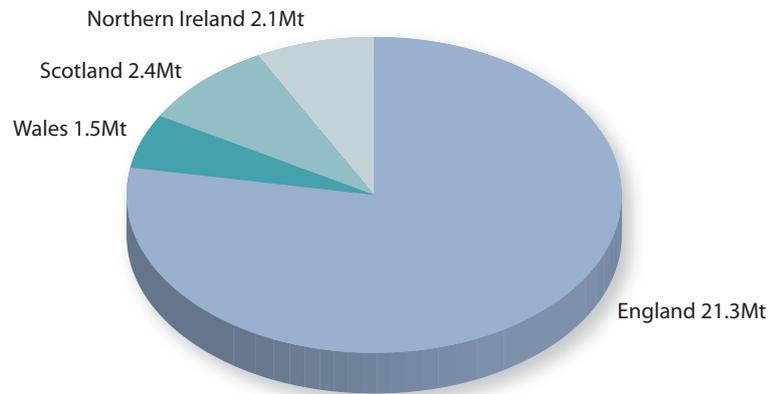
asphalt materials to support road user and owner demands.

Following the recession, these markets declined very steeply in 2012, but have picked up since 2013. Asphalt sales rose 25% between 2013 and 2017, but remain 9% below the pre-recession levels in 2007 (figure 3.6a).

3.6b: MPA asphalt sales by region, 2017. Source: MPA.



3.6c: UK<sup>(a)</sup> asphalt sales, 2017. Source: QPANI, MPA.



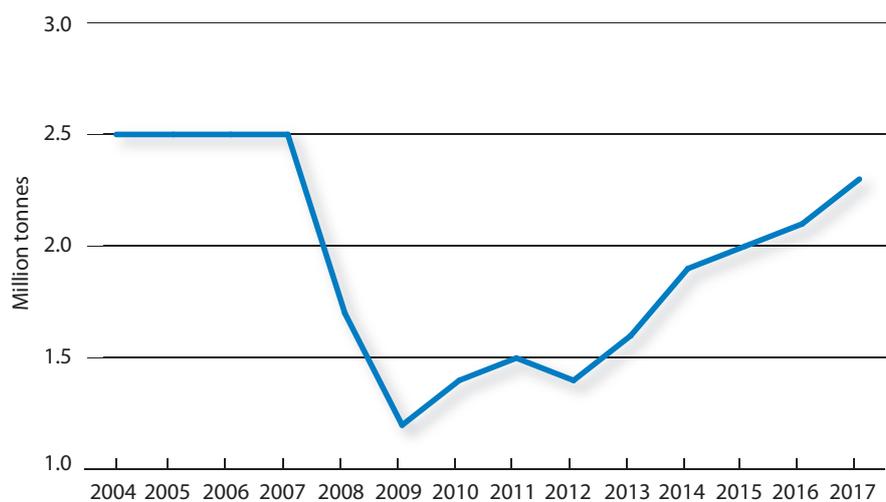
<sup>(a)</sup> Based on the assumption that MPA sales represent 90% of the total GB market for asphalt.

### 3.7 Mortar



Mortar plays an essential role in the building and construction industries, providing the 'glue' that bonds bricks, blocks and stones into masonry. About 70% of mortars used in the UK come from factory-produced sources, as opposed to being mixed on site, reflecting the ever increasing demands for quality building products in the development of our built environment. With the financial crisis and the collapse in housing construction, mortar sales in Great Britain fell by half between 2007 and 2009. Mortar sales started to recover from 2013, growing by 65% between 2013 and 2017, in line with

3.7a: MPA mortar sales in GB. Source: MPA.



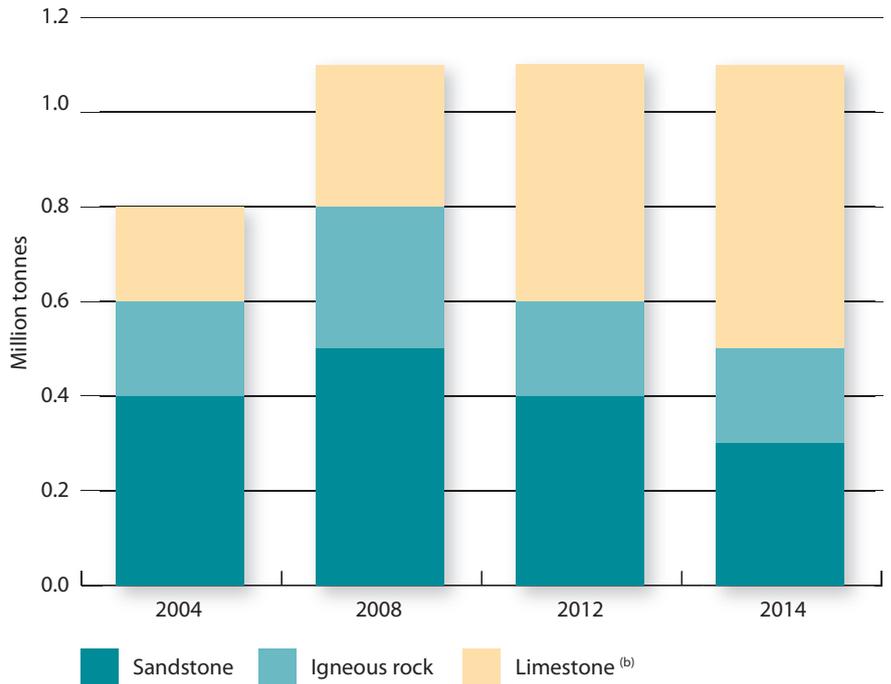
the sharp increase in new housebuilding. Despite the significant growth seen in recent years, mortar sales volumes remained about 9% below pre-recession peak in 2017 (figure 3.7a).

### 3.8 Dimension stone



The UK industry for dimension stone plays an important role in ensuring that the unique local characteristics of natural stone-built areas of the UK are maintained. In addition, there is demand from the heritage sector and from the prestige development market both at home and overseas. Annual production continues from quarries in Great Britain at about 1 million tonnes (figure 3.8a), but imports from China and India continue to impact on the overall market.

3.8a: Sales of dimension stone in GB (selected years)<sup>(a)</sup>. Source: ONS (AMRI).



<sup>(a)</sup> Due to the cessation of the Annual Raised Mineral Inquiry (AMRI) survey, which used to be carried out by the Office for National Statistics, the latest statistics available only cover sales volumes up to 2014.

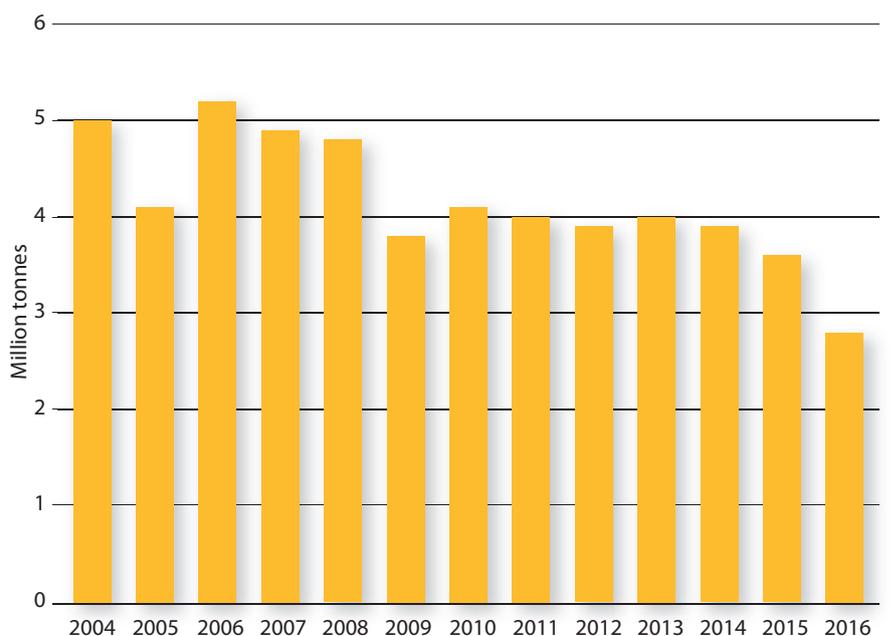
<sup>(b)</sup> Includes dolomite.

### 3.9 Industrial sand



As well as being used for glass making, paints, plastics and foundry moulds, high purity silica sands are also used in a wide range of essential industrial applications. After declining significantly between 2006 and 2009, in light of changes in the UK heavy industry and manufacturing sectors, the production of industrial sand in Great Britain stabilised at about 4 million tonnes per year until 2015. In 2016 however, sales volumes declined by 22% (figure 3.9a).

3.9a: Sales of industrial sand in GB. Source: ONS (AMRI), MPA.

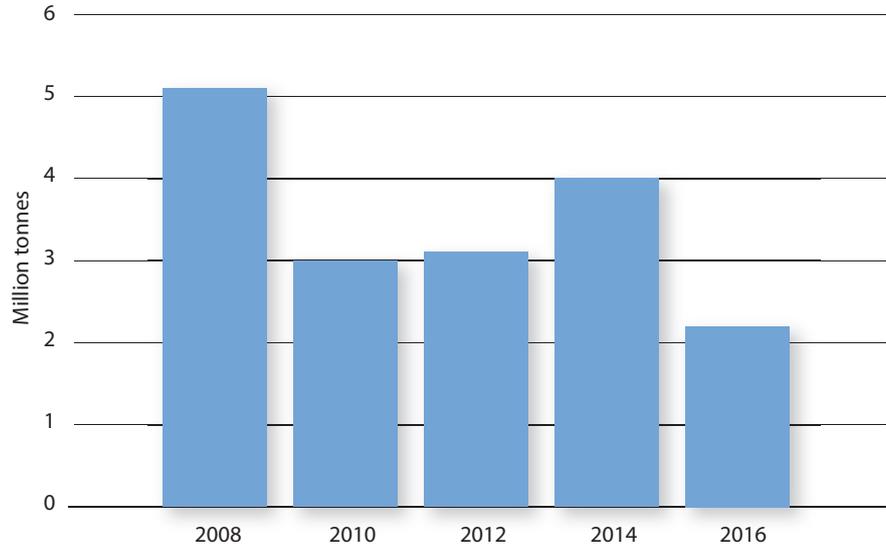


### 3.10 Slag



Slag is produced during the manufacture of iron and steel, and is processed into a variety of products, which can be used in many applications ranging from aggregates for construction products, to water treatment, soil conditioners and cementitious materials. The cementitious properties of blast furnace slag were discovered in the late 19<sup>th</sup> century and it has been widely used in cement manufacture for over 100 years.

3.10a: Sales of slag aggregates in GB (selected years). Source: MPA.



In the UK, ground granulated blast furnace slag (GGBS) generally replaces between 20% and 80% of the normal Portland cement. Air cooled blast furnace and steel slags are used as aggregates in construction products, with the latter playing an important role as

a high skid resistant surfacing aggregate in maintaining the safety of our road network. They are also used in the treatment of waste water and for soil remediation in agricultural markets.



# 4 MPA markets outlook

**Summary.** When considering the prospects for construction and the mineral products industry over the next two to three years, Brexit is inevitably a major stumbling block. Muted UK economic growth, alongside elevated uncertainty regarding the Brexit negotiations, are dampening activity. Mineral products demand growth all but stopped in 2017, except for mortar, which benefited from continued momentum in housebuilding. This year, markets are set to see more of the same, with demand remaining broadly flat in 2018, before picking up from 2019, as major infrastructure projects come to full capacity.

The MPA collects and analyses sales volumes for a range of mineral products, including primary aggregates, asphalt, ready-mixed concrete and mortar. The MPA sales volumes surveys are carried out on a quarterly basis from a consistent sample of member companies, and represent between 70%-95% of the total GB market for these materials.

Our survey showed that growth in mineral products sales in Great Britain ground to a halt in 2017 across all major markets, except for mortar. Sales volumes of ready-mixed concrete declined by 2.6% in 2017 compared to 2016, whilst asphalt (0.2%) and aggregates (-0.3%) sales remained broadly flat. Mortar sales, however, enjoyed another year of strong growth, up 10.6% compared to 2016.

Whilst mortar sales are closely linked to housebuilding, materials such as aggregates and ready-mixed concrete are ubiquitous to all types of construction work and are not usually stocked for future use on project sites. The sale of these materials can therefore be used as a reliable and straightforward indicator of ongoing construction activity. The weakening in these markets, not only at national level but also across all regions in Great Britain, suggests that outside new housing construction, there are limited sources of growth.

The prospects for construction activity over the next two to three years are mixed. Subdued UK economic activity and enduring uncertainty relating to Brexit, the future trading relationship and concerns about passporting rights for the financial sector, are expected to impact on major new private construction investment this year. Against this general economic and political backdrop, forecasters such as the Construction Products Association (CPA) expect construction output in 2018 will remain flat, before returning to

growth in 2019 and 2020, when infrastructure work gradually speeds up. By sector, any growth is reliant on housebuilding outside London and on the delivery of major infrastructure projects and spending plans for roads, rail and energy. Meanwhile, prospects for the construction of office buildings are grim: the CPA expects work in the commercial sector, the second largest construction sector, to fall in 2018.

The outlook for mineral products follows a similar pattern, with a major shift between 2018 and 2019 that is conditional to the delivery of infrastructure projects and progress in the Brexit negotiations. Continued growth in housebuilding over the next two to three years will help further growth in mortar sales, but the aggregates, asphalt and ready-mixed concrete markets will have to wait for a boost from the planned increase in the Road Investment Strategy spending plans and work underway for HS2 and Hinkley Point C from 2019. As a result, the MPA forecasts mineral products markets will grow by 5% for asphalt over 2018-20, 4% for primary aggregates and by 2% for ready-mixed concrete. Continued muted growth in housebuilding over the forecast period will help mortar sales to increase steadily each year, and are expected to be 8% up in 2020 compared to 2017.

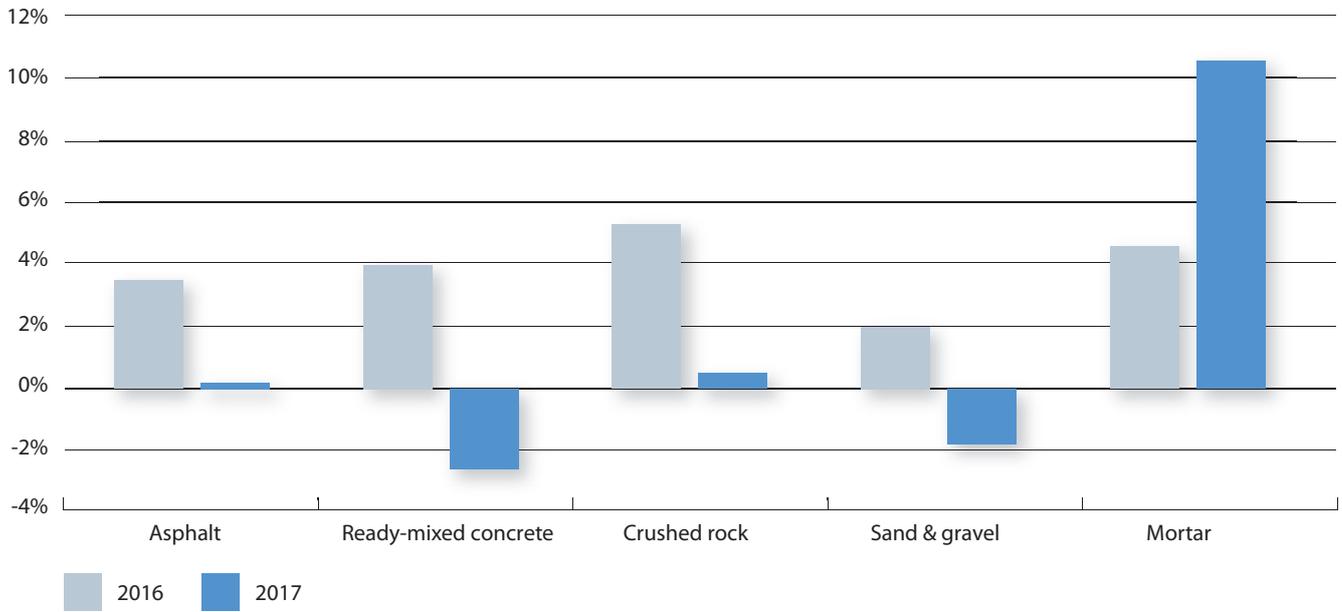
For this outlook to materialise, it is essential that there are no further delays on the delivery of these projects, and that any new and unnecessary sources of economic and political uncertainty are averted, to avoid destabilising an already weak level of activity and hindering investment decisions, both in construction and within the mineral products industry.

This cautious assessment also needs to be put into a broader context as there are longer-term demand pressures that will be

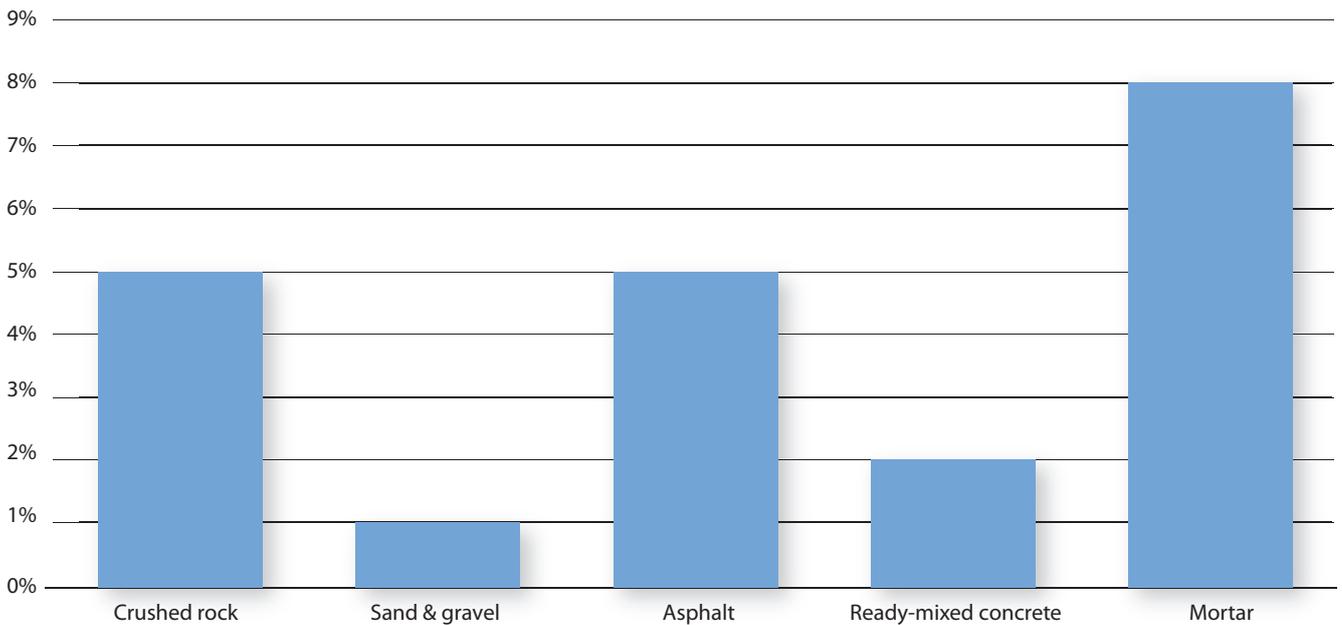
challenging the UK construction supply chain, including ensuring an adequate supply of mineral products. Ill-equipped infrastructure, housing and healthcare show how vital it is for both Government and industry to look beyond the short term economic and political uncertainties and focus on the longer-term needs. This is reflected in the Government Infrastructure and Construction Pipeline, which outlines planned construction investment to 2021 and beyond. Infrastructure and housing investment are a fundamental part of the Industrial Strategy, aiming at addressing the productivity challenge, and will be a fundamental part of the construction sector plan.

A study carried out by the MPA shows that significant volumes of mineral products, including primary aggregates, will be needed to build tomorrow's prosperity. The industry faces a cumulative demand for aggregates between 3.2 and 3.8 billion tonnes by 2030. This is great news for the industry in terms of market prospects, but it comes with challenges. There are issues around the supply-mix of aggregates that will need to be addressed, as shown by the declining trend in permitted reserves of land-won sand & gravel (see Section 5). This puts growing pressures on other sources of supply, particularly crushed rock, marine sand & gravel and recycled aggregates, to meet future demand. There will also be challenges for the industry relating to future investment in operational and transport facilities, safeguarding of existing mineral infrastructure such as wharves and rail-heads, and access to skills.

4.a: MPA sales volumes of mineral products, annual percentage change. Source: MPA.



4.b: Medium term outlook for MPA mineral products sales, percentage change, 2018-20. Source: MPA.



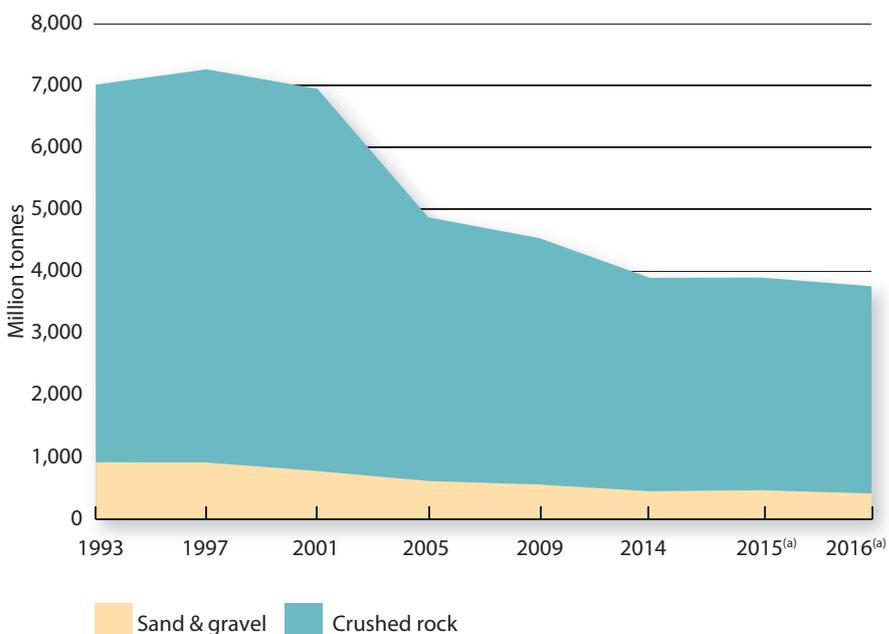
# 5 Long term aggregates supply

Subject to geological conditions, a key factor influencing the supply of aggregates is the operation of the mineral planning system. In England, the Managed Aggregates Supply System is designed to ensure a steady and adequate supply of aggregates.

Figure 5.a indicates permitted reserves of aggregates since the early 1990s. However, replenishment rates are more meaningful statistics, as they provide information on the long term availability of supply. If the amount of aggregates receiving planning permission equals the level of production, the replenishment rate is 100%.

Figure 5.b indicates that whilst replenishment rates for crushed rock have been close to parity in recent years, sand & gravel is being replaced at a much slower pace: for every 100 tonnes of sand & gravel used, only 60 tonnes are being replaced through new planning permissions, which has resulted in significant decline in permitted reserves of sand & gravel over the last 15 years. The implication of long term replenishment rates below 100% is that shortages of supply may become apparent. Evidence from Local Aggregates Assessments and Local Plan formulation suggests that this is beginning to appear in parts of Yorkshire, the South West, the South East, the North West, and the West Midlands.

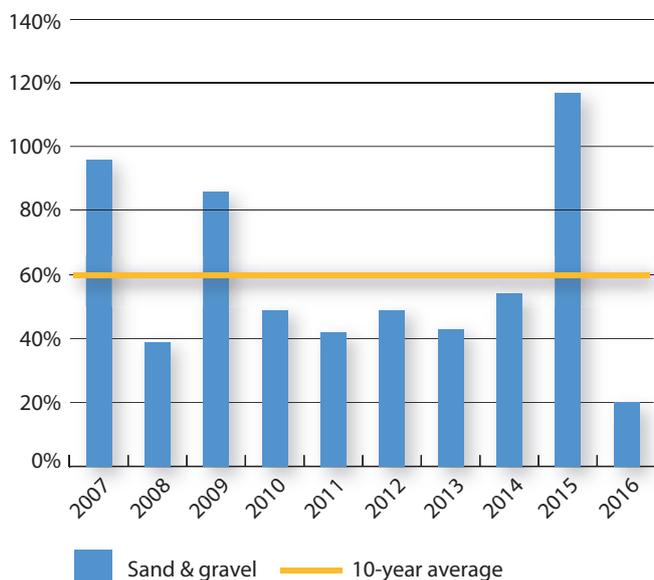
5.a: Permitted reserves of land-won primary aggregates in England and Wales. Source: BGS (AM surveys), MPA.



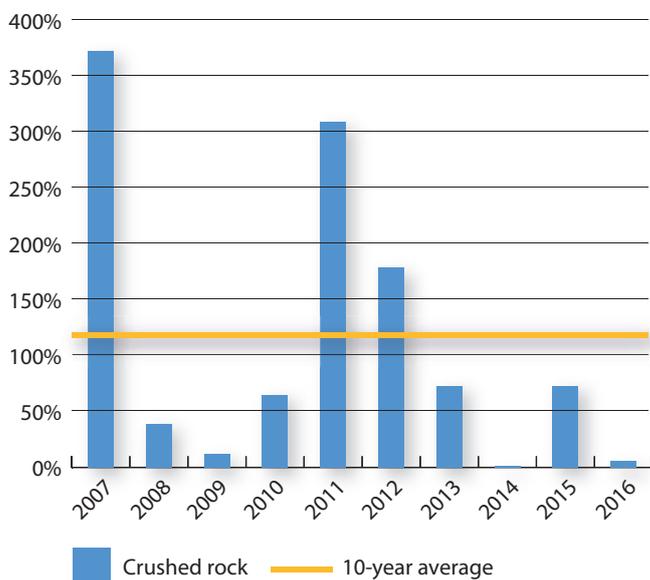
(a) Historical tonnages are from the aggregates minerals surveys, a 4-yearly survey which has been undertaken since 1973. Estimates for 2015 and 2016 are provided by MPA.

5.b: GB replenishment rates for sand & gravel<sup>(a)</sup> and crushed rock. Source: MPA.

## Sand & gravel



## Crushed rock



<sup>(a)</sup> If the amount of aggregates receiving planning permission equals the level of production, the replenishment rate would be 100%.

# 6 Taxation

The industry is in the scope of the European Union Emissions Trading System, Climate Change Agreements linked to the UK Climate Change Levy and the Carbon Reduction Commitment Energy Efficiency Scheme, all of which are focused on carbon reduction. In addition, the industry has to manage the indirect impact of measures and associated costs related to generating and supplying energy used by the industry.

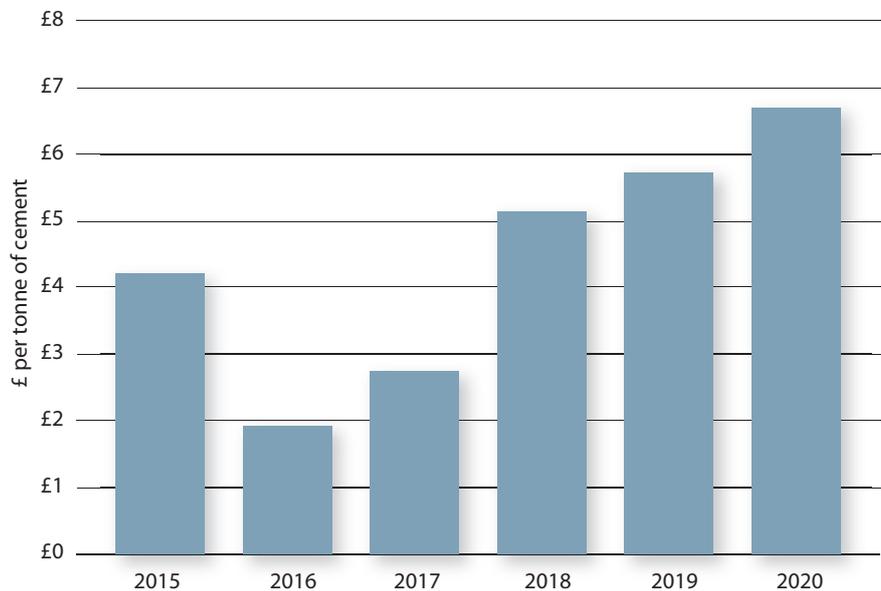
the indirect cost of the renewables obligation and small scale feed-in-tariffs.

The cumulative burden of environmental and planning related taxation and regulation on mineral products is set to increase over the coming few years. For cement, this could rise to £6.70 per tonne reflecting the expected increase in the carbon price.

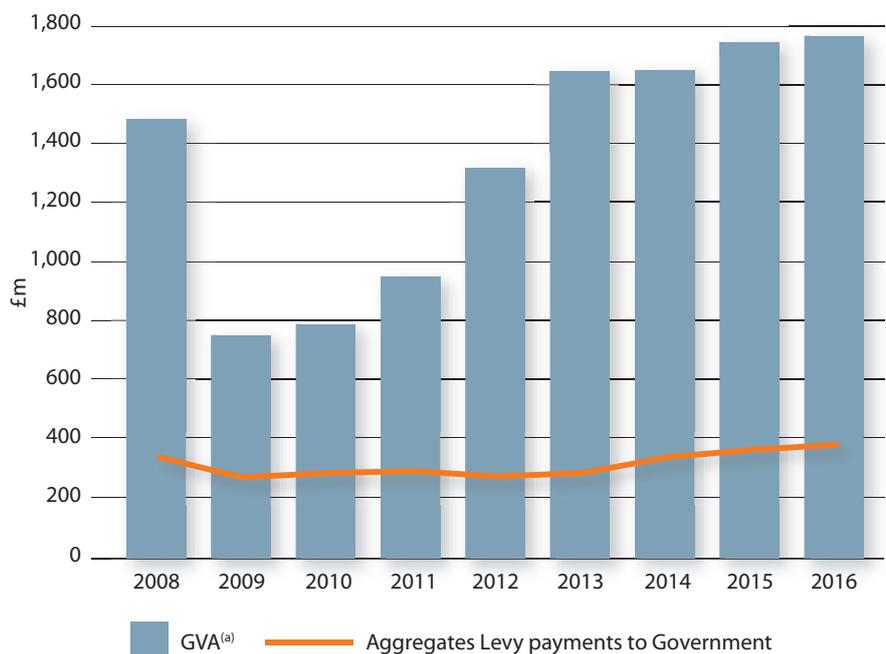
Climate change and energy measures in 2015 were equivalent to £4.20 per tonne of cement produced (figure 6.a). This fell to £1.93 per tonne of cement in 2016 after the introduction of compensation for

For aggregates, the annual cost of the Aggregates Levy alone reached £378m in 2016 (figure 6.b).

6.a: **Estimated cost of energy and climate change measures for the cement industry.** Source: MPA.



6.b: **Aggregates Levy payments to Government.** Source: HMRC, ABS.



<sup>(a)</sup> Quarrying of stone, sand & clay (SIC 08.1).

# 7 Environment and sustainability

## 7.1 Recycling

Recycled and secondary materials accounted for 29% of total aggregates supply in Great Britain in 2016 (figure 7.1a).

Recycled aggregates are the product of processing inert construction and demolition waste, asphalt planings and used railway ballasts into construction aggregates. Just as primary aggregates, these materials conform to European aggregate standards and national specifications, and make a key contribution to total aggregates demand.

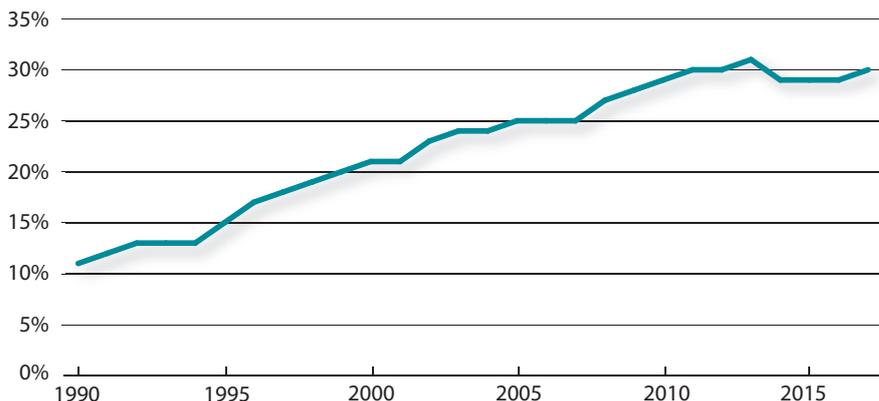
Secondary materials include blast furnace and steel slags. Other secondary aggregates include incinerator bottom ash (IBA), furnace bottom ash (FBA), china clay sand, slate and crushed glass sand.

Collectively, they contribute significantly to the total aggregates demand and are used, predominately, in the lower layers of road pavements, but also in some concrete manufacture and a range of other construction applications.

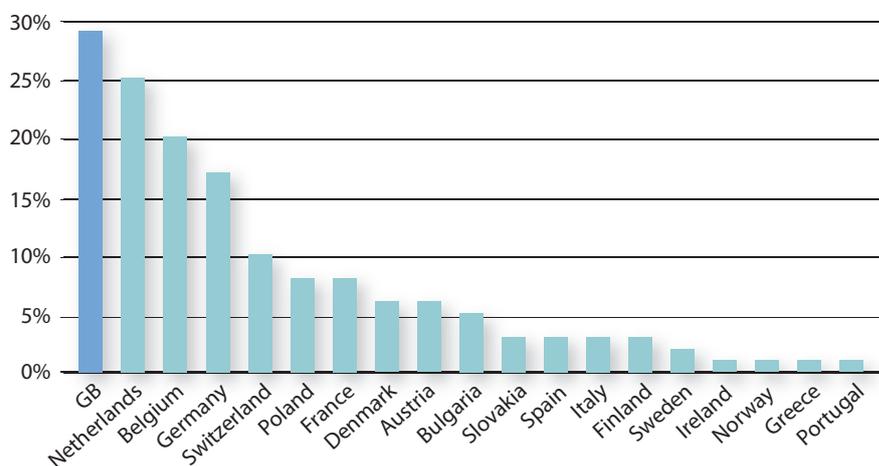
Sales of Portland cement are supplemented by the use of other cementitious materials including ground granulated blast furnace slag (GGBS) and fly ash (figure 7.1c). These cementitious materials are supplied either as a component of blended cements or directly to concrete manufacturing facilities.

7.1a: Share of recycled and secondary materials in total GB aggregates sales.

Source: MPA.

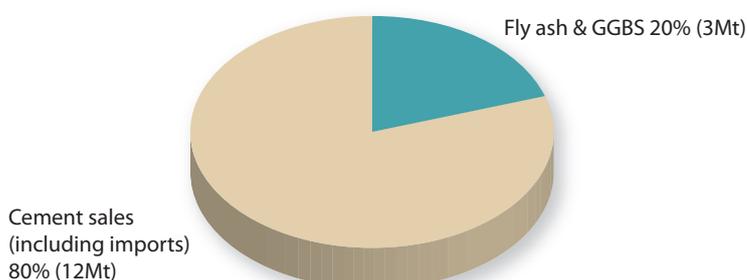


7.1b: Share of recycled<sup>(a)</sup> and secondary materials in total aggregates sales, 2016. Source: UEPG (2017), MPA.



<sup>(a)</sup> Includes manufactured, recycled (fixed and mobile) and aggregates re-used on site.

7.1c: GGBS & fly ash in the MPA cementitious market in GB, 2016. Source: MPA.



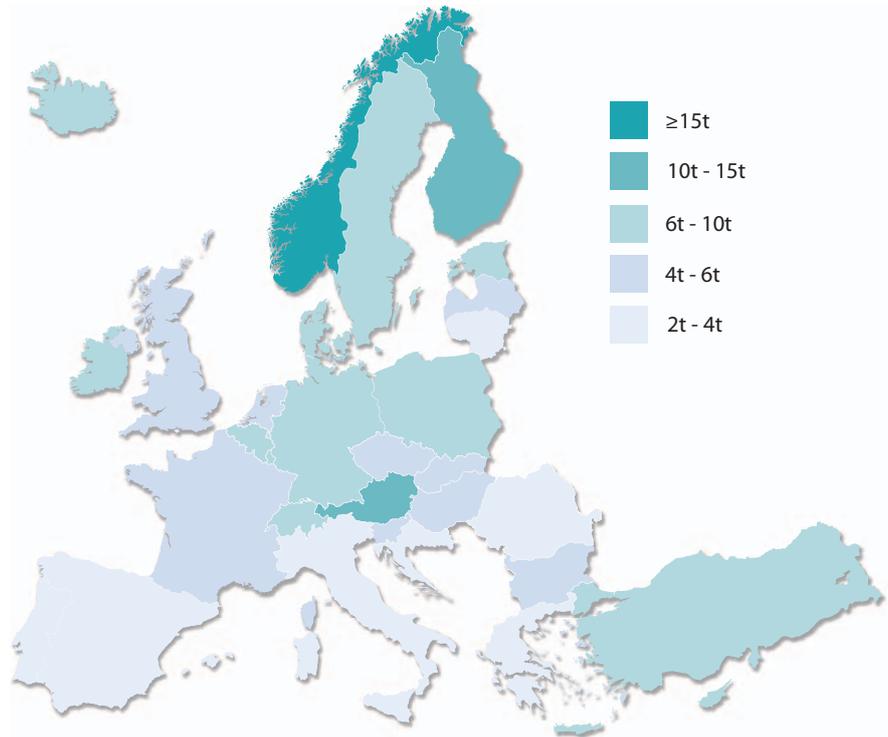
## 7.2 Resource efficiency

UK sales of both aggregates and cement per capita are relatively low and amongst the lowest in comparison with the rest of Europe (figure 7.2a). Figures 7.2b and 7.2c below indicate that the use of aggregates and cement per capita is about 20% and 50% respectively below the European average.

<sup>(a)</sup> Includes primary, manufactured, recycled (fixed and mobile) and aggregates re-used on site.

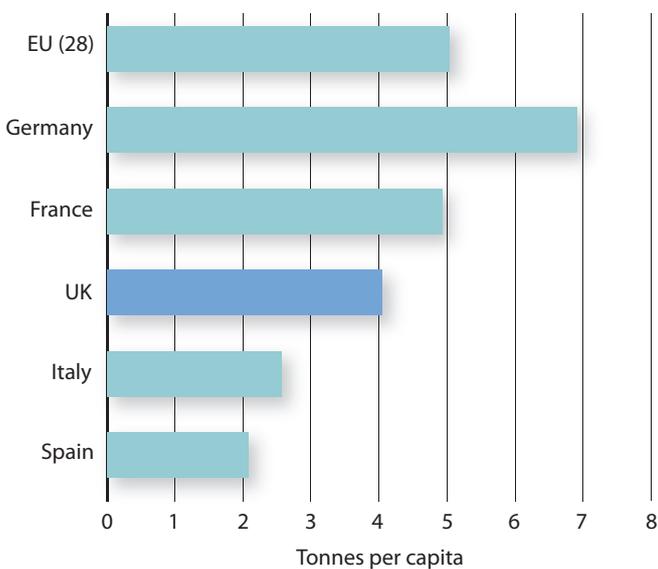
7.2a: **Aggregates<sup>(a)</sup> production in Europe, tonnes per capita, 2016.**

Source: UEPG.



7.2b: **Aggregates<sup>(a)</sup> production per capita, 2016.**

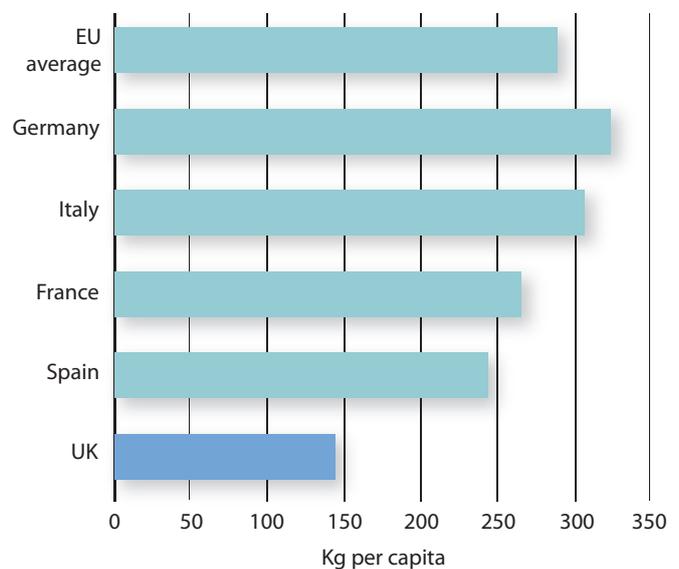
Source: UEPG (2017).



<sup>(a)</sup> Includes primary, manufactured, recycled (fixed and mobile) and aggregates re-used on site.

7.2c: **Cement consumption per capita, 2016.**

Source: ERMCO (2017).

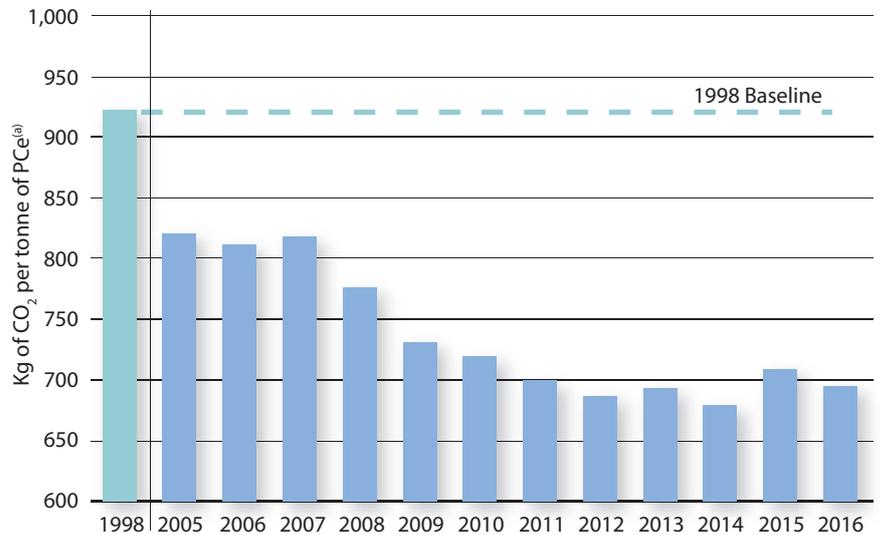


### 7.3 Carbon emissions

Cement manufacture is, by its nature, energy and carbon dioxide intensive. The UK industry has been a world leader in its carbon reduction drive to date, reducing direct CO<sub>2</sub> emissions by 25% between 1998 and 2016 (figure 7.3a). UK manufacturers achieved this substantial decarbonisation through heavy investment and a progressive move toward using alternative waste-derived fuels. In 2016, the sector took 39% of its kiln fuel thermal input from waste derived sources, down from 44% in 2014. In addition, cement manufacturers replaced 6% of their raw materials with waste derived alternatives.

In October 2017, MPA Cement and the UK government published a joint action plan setting out the tasks required to decarbonise the industry. Three key technologies for reducing greenhouse gas emissions in the cement manufacture were highlighted, including carbon capture and storage, continuing ongoing efforts to switch fuel to biomass, and the deployment of a range of new low-carbon cements in the UK.

7.3a: Carbon dioxide in cement production. Source: MPA.



<sup>(a)</sup> Portland Cement Equivalent (PCe) is a normalising factor related to cement output often used by the cement industry, which enables a comparison of impacts such as environmental between sites whilst taking into consideration differing production methods, cement product types and movement of intermediate products. Includes non-kiln sites production from 2010 onward.

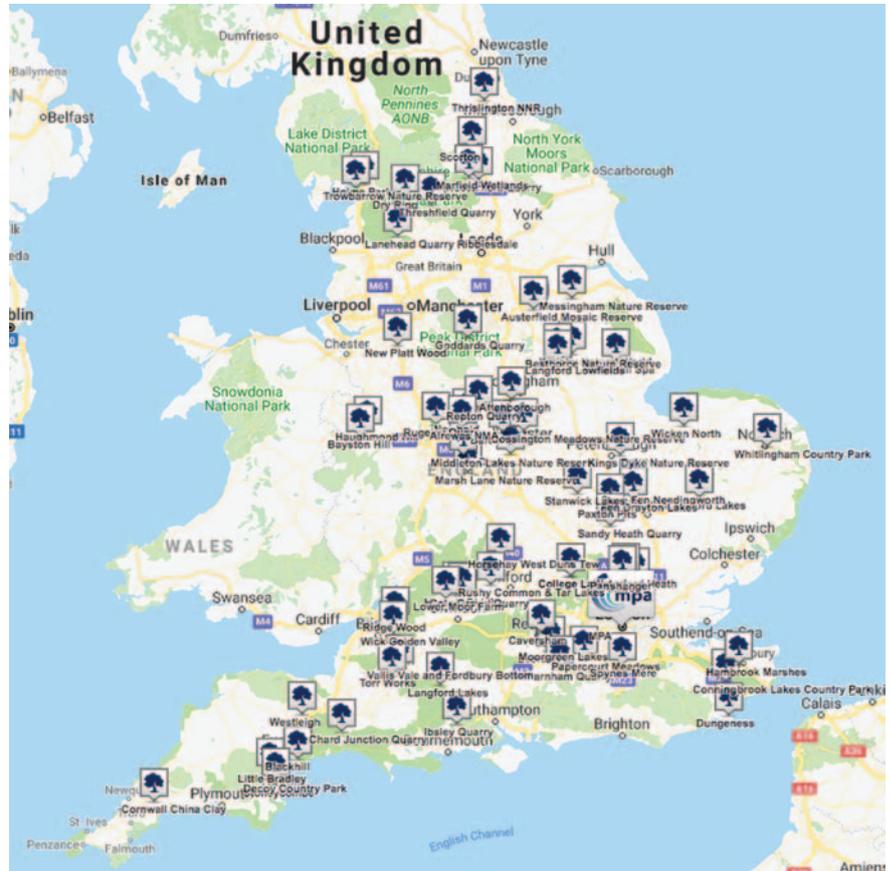
### 7.4 MPA National Nature Park

The minerals industry is uniquely placed to contribute to delivery of national and local biodiversity targets. At least 8,000 hectares of priority habitats have been created through the restoration of old quarries and management of land, the equivalent of eight times Richmond Park. Also, at least a further 10,500 hectares of priority habitat is currently planned through the restoration of sites.

Figure 7.4a shows some of the best restored sites that the public can visit, a nationwide network of quarries that have been restored for wildlife and which are accessible to the public. This map, which we are continually adding to, includes 71 sites around the country covering over 5,000 hectares, with a range of facilities including nature trails, viewing hides and visitor centres. Collectively they form the MPA National Nature Park.

The map displays some of the main restoration sites, a nationwide network of quarries that have been restored for wildlife and which are accessible to the public. It is available on the MPA website.

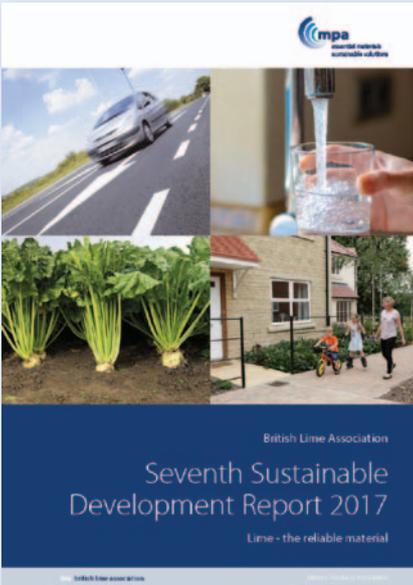
7.4a: MPA National Nature Park Source: MPA.



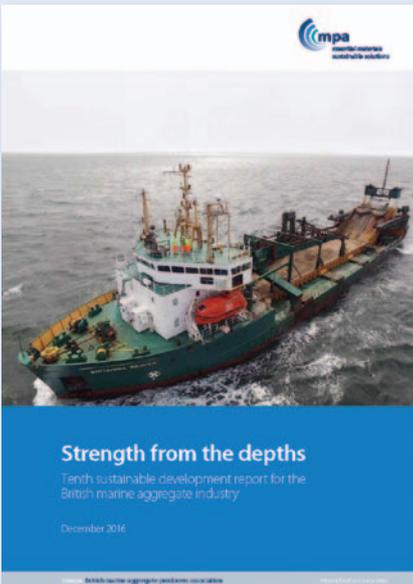
## 7.5 Sustainable Development Reports

### Links to Sustainable Development Reports

Other than those noted, all reports are available from: <http://www.mineralproducts.org/sustainability/reports.html>



<https://www.britishprecast.org/Publications/Sustainability-Matters-2017.aspx>



<https://www.concretecentre.com/Publications-Software/Publications/The-Ninth-Concrete-Industry-Sustainability-Perform.aspx>

# About the MPA

## Who we are

MPA is the industry trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

Five key aims underpin the work of the MPA, creating the high level agenda it uses to influence Government and other key stakeholders.

We seek:

- 1 Economic conditions that support investment
- 2 Better Government support for an essential industry
- 3 A reasonable licence to operate
- 4 Proportionate legislation and regulation
- 5 Recognition of progress

## What we do

MPA represents the interests of MPA members and the industry with all levels of Government, regulators, other organisations and external audiences.

Key activities include:

- Improving health & safety
- Representing the sector
- Raising awareness of the sector and its contribution to the economy
- Gathering and presenting evidence and information
- Influencing policy, regulation and legislation in the UK and EU
- Protecting the industry's licence to operate
- Safeguarding and developing markets
- Improving perceptions
- Informing on markets and economic contribution
- Influencing technical and design standards
- Influencing supply chains
- Encouraging innovation
- Promoting the use of mineral products

## The MPA Vision for 2025

Member consultation has established that the industry wishes:

*'to be valued as an essential and economically, socially and environmentally sustainable industry of significance to the economy and our way of life'*

and perceived as:

- cohesive and well-organised, responsible and accountable;
- creative, collaborative and outward looking;
- professional and competent, setting high standards to retain and attract new people, reflecting UK diversity;
- innovative, embracing the use of best available technology and sharing best practices;
- engaging constructively and strategically with Government, regulators, local communities and other stakeholders.

## MPA Strategic Priorities and Objectives

The following 7 Strategic Priorities and their related objectives will underpin the achievement of the MPA Vision for 2025.



Employee & Contractor Health & Safety • Public Safety



Employment • Skills & Competence  
Equality & Diversity • Local Communities



Access to Sufficient Minerals & Resources  
Circular Economy & Resource Efficiency • Water • Waste



Carbon & Atmospheric Emissions  
Energy • Transport • Adaptation



Biodiversity • Land Restoration • Natural Capital  
Geodiversity • Heritage • Environmental Protection



Technical Codes and Standards  
Sustainable Products • Sustainable Construction



Contribution to Economy and Supply Chain  
Influencing the Business Environment  
Stakeholder Engagement • Making the Link

# MPA members

## Producer, associate and affiliate members as of April 2018.

### MPA Producer members

Aggregate Industries UK Ltd  
Albion Stone Plc  
Allen Newport Ltd  
Ballast Phoenix  
Bathgate Silica Sand Ltd  
Bath Stone Group  
Bestco Surfacing Ltd  
Black Mountain / De Lank Quarry Ltd  
Borough Green Sandpits Ltd  
Breedon Southern Ltd  
Brett Group  
Brice Aggregates Ltd  
Britannia Aggregates Ltd  
Bromfield Sand & Gravel Co. Ltd  
Burlington Stone Ltd  
Caithness Flagstone Ltd  
Cardigan Sand & Gravel Co. Ltd  
The Casey Group Ltd  
CEMEX UK  
Chambers Runfold  
Colas Ltd  
Cormac Solutions Ltd  
Cornish Lime Company Ltd  
CPI Mortars Ltd  
Cullimore Group  
Day Aggregates Ltd  
Deme Building Materials Ltd  
Dunhouse Quarry Co.  
Erith Haulage Company Limited  
Eurovia Roadstone  
F M Conway Ltd  
Ferns Group  
Forest Pennant  
Francis Flower  
Gallagher Group Ltd  
G.D. Harries & Sons Ltd  
GRS Roadstone Limited  
Grundon Sand & Gravel Ltd  
H Sivyier (Transport) Ltd  
H.H. & D.E. Drew  
H Tuckwell & Sons Ltd  
Hanson UK  
Harleyford Aggregates Ltd  
Harsco Metals Group Limited  
Hereford Quarries Ltd  
Hills Quarry Products Limited  
Hogan Group  
Holderness Aggregates Ltd

Hugh King & Co.  
Hutton Stone Co. Ltd  
Imerys Minerals Ltd  
Ingrebourne Valley  
J & J Franks Ltd  
J Clubb Ltd  
J.J. Prior Limited  
John Carr (Liverpool) Ltd  
John Wainwright & Co. Ltd  
J Mould (Reading)  
JPE Holdings Ltd  
Kerneos Ltd  
Lhoist UK Ltd  
Lovell Stone Group  
Mansfield Sand Co. Ltd  
Marchington Stone  
Marshalls Plc  
Midland Quarry Products  
Moorhouse Sand & Gravel Pits  
Morris & Perry (Gurney Slade) Ltd  
Myers Group  
Northumberland Quarries  
O'Donovan Waste Disposal Ltd  
Portland Stone Firms Ltd  
Quattro (UK) Ltd  
Raymond Brown Quarry Products Ltd  
R Collard Ltd  
Rotherham Sand & Gravel Co. Ltd  
S Walsh and Sons  
Salop Sand & Gravel Supply Co Ltd  
Sea Aggregates Ltd / Euromin Ltd  
Sibelco UK  
Singleton Birch Ltd  
Smith & Sons (Bletchington) Ltd  
Springfield Farm Ltd  
SRC Aggregates  
SSG Quarries  
Syreford Quarries & Masonry Ltd  
Tarmac  
TJ Transport Ltd  
Tradstocks Natural Stone  
Trefigin Quarries Ltd  
Tudor Griffiths Group  
United Recycled Aggregates Limited  
Volker Dredging Ltd  
W Clifford Watts Ltd  
Wildmoor Quarry Products

### MPA Associate members

ABB Ltd UK  
Addax International Ltd  
Addleshaw Goddard LLP  
Ammann Equipment Ltd  
Anglian Aggregate Bagging Co. Ltd  
Archaeological Research Services Ltd  
Aspen Advisory Services Ltd  
Babcock International Group  
Banner Contracts (Halnaby) Ltd  
BASF Construction Chemicals (UK) Limited  
BDS Marketing Research Ltd  
Birketts Solicitors  
BPP Consulting  
Brigade Electronics Plc  
British Sugar Plc  
BSG Ecology  
Burgess Salmon LLP  
Cathay Industries (UK) Ltd  
Central (M&W) Planning  
Chaselet Ltd  
Christeys UK Ltd  
Command Alkon Ltd  
The Crown Estate  
Darren Broadhead Consulting Ltd  
David Ball Group  
Davies Planning Ltd  
D B Cargo  
DLA Piper UK LLP  
DrumBlaster Pty Ltd  
DustScan Ltd  
EA Ltd  
EiS Property  
Envireau Water  
EPC-UK  
ESI Consulting  
Farrar Natural Stone  
Finning (UK) Ltd  
Firstplan  
Foot Anstey LLP  
Freeths Solicitors  
French Jones  
GCP Applied Technologies  
George F. White  
Gerald Eve LLP  
GridBeyond  
G V A Grimley  
Hafren Water  
Hargreaves (UK) Services Ltd

Heaton Planning Ltd  
 Hewitt Robins International Ltd  
 Howes Percival LLP  
 Huntsman Pigments  
 Industrial Diagnostics Company Ltd  
 J C Bamford Excavators Ltd  
 Jenco Consulting Ltd  
 John Brooks TMR  
 KJ Services Limited  
 Knights 1759  
 Land & Mineral Management Ltd  
 Landesign Planning and Landscape Ltd  
 Lanxess Ltd  
 Lime Logistics Ltd  
 Mando Solutions Limited  
 Marubeni-Komatsu Ltd  
 Matthews & Son Chartered Surveyors  
 Mentor Training Solutions Ltd  
 Mineral Products Qualifications Council  
 Mineral Services Ltd  
 MJCA  
 Neil Beningfield & Associates Ltd  
 Orica Europe Ltd  
 PCM Professional Limited  
 PDE Consulting Ltd  
 Port of Tilbury London Ltd  
 PQ Silicas UK Limited  
 Prince Minerals Ltd  
 Procter Johnson  
 ProSpare Ltd  
 REC Ltd  
 Rema Tip Top Industry UK Ltd  
 Response Engineering  
 Rettenmaier UK Ltd  
 Richard Fox & Associates Ltd  
 R Swain and Sons Ltd  
 RT Safety Solutions Ltd  
 Savills (L&P) Ltd  
 SERAC UK  
 Siemens  
 Silkstone Environmental Ltd  
 SLR Consulting Ltd  
 Soils and Stone Limited  
 Speciality Minerals  
 Spillard Safety Systems Ltd  
 Stephens Scown  
 Strategy Public Relations Ltd  
 Tata Steel  
 Thrings LLP  
 TLT Solicitors  
 UK Quality Ash Association  
 United Plant Services Ltd  
 Walters Group  
 Wincanton  
 Wirtgen Limited  
 WYG Environment Planning Transport Ltd

## **MPA Affiliate Members**

### **British Association of Reinforcement**

ArcelorMittal Kent Wire Limited  
 BRC Ltd  
 Celsa Steel (UK) Ltd  
 Dextra Manufacturing – UK  
 ERICO Europa (GB) Ltd  
 Express Reinforcements Ltd  
 Max Frank Ltd  
 Outokumpu Stainless Limited  
 RFA-Tech  
 ROM UK Ltd

### **British Calcium Carbonates Federation**

Ben Bennett Jr Ltd  
 Francis Flower  
 Hanson Aggregates  
 Imerys Minerals Ltd  
 Leith (Scotland) Ltd  
 Longcliffe Ltd  
 Omya UK Ltd  
 Specialty Minerals Lifford  
 Tarmac Ltd

### **Eurobitume UK**

Shell Bitumen  
 Total Bitumen  
 Nynas  
 Puma Bitumen  
 ENI

### **British Precast**

#### **Full Members**

ABM Precast Solutions Limited  
 Acheson + Glover  
 ACP (Concrete) Limited  
 Aggregate Industries (UK) Limited  
 Amber Precast Limited  
 Banagher Precast Concrete Ltd  
 Barcon Systems Limited  
 Besblock Limited  
 Bison Precast  
 Blanc de Bierges  
 Breedon Northern Ltd  
 Brett Landscaping & Building Products  
 Broome Bros (Doncaster) Limited  
 Castle Construction Products Ltd  
 CEMEX  
 Charcon Construction Solutions  
 CCP Building Products Ltd  
 Collier & Henry Concrete (Floors) Limited  
 Collier Quarrying & Recycling Ltd  
 Cornish Concrete Products Limited  
 CPM Group Limited  
 Craven Concrete  
 Creagh Concrete Products Limited  
 Cross Concrete Flooring Ltd

Decomo UK Limited  
 Delta Bloc UK Limited  
 E & JW Glendinning Limited  
 Ebor Concretes Limited  
 Elite Precast Concrete Limited  
 Evans by Shay Murtagh Precast  
 F P McCann Limited  
 Forterra Building Products Ltd  
 Forticrete Limited  
 H+H UK Limited  
 Hillhouse Quarry Group Ltd  
 Interfuse Limited  
 Jordan Concrete Ltd  
 Laird Bros (Forfar) Ltd  
 Lignacite (Brandon) Ltd  
 Litecast Limited  
 Longley Concrete Ltd  
 Marshalls plc  
 Milton Precast  
 Mona Precast (Anglesey) Limited  
 Naylor Concrete Products Limited  
 Newlay Concrete  
 Patersons of Greenoakhill Ltd  
 Plasmor Limited  
 Premium Concrete Products Ltd  
 Quinn Building Products Limited  
 Robeslee Concrete Company Limited  
 S Morris Limited  
 Sellite Blocks Limited  
 Skene Group Construction Services Ltd  
 Specialist Precast Products  
 Stanton Bonna Concrete Limited  
 Sterling Services Limited  
 Stocks Blocks Limited  
 Supreme Concrete Limited  
 Tarmac Building Products Ltd  
 Techrete Limited  
 Thakeham Tiles Limited  
 Thomas Armstrong Group  
 Thorp Precast Limited  
 Topflight Precast  
 Townscape Products Limited  
 TT Concrete Products Limited  
 WDL (Concrete Products) Ltd  
 William Rainford (Holdings) Limited

### **British Precast**

#### **Associate Members**

Adomast Manufacturing Ltd  
 Arcelor Mittal Sheffield Ltd  
 BASF Construction Chemicals  
 BDS Marketing Research Ltd  
 Beresford's Flooring Ltd  
 Besser Company  
 Bianchi Casseforme SRL  
 BRE  
 Breedon Cement Ltd  
 Cambrian Services Limited  
 Canadian Precast Institute

Carbon8 Aggregates Ltd  
Caswick Ltd  
Cathay Industries (UK) Ltd  
CDS Curing T/A Ceramic Drying Systems Ltd  
Cement and Concrete Association of New Zealand  
Cenin Limited  
Christeyns UK Ltd  
Chryso UK Ltd  
ClarkeConsult  
Command Alkon UK Ltd  
Concrete Manufacturers Association - South Africa  
Concrete Technology Ltd  
Conspare Ltd  
Construction Fixing Systems Ltd  
Construx  
Cooper Research Technology  
Coote Engineering Ltd  
Cordek Limited  
CPI Worldwide  
CSM Thermomass  
Doncaster College  
Dundee College  
Dywidag-Systems International  
E3 Recruitment  
Ecocem Ireland Ltd  
Ecoratio Ltd  
EKC Systems Ltd  
Elematic Oyj  
Elkem Materials Ltd  
Erico Europe BV (Pentair Group)  
Euro Accessories Limited  
Fosroc Limited  
GCP Applied Technologies Ltd  
Graceland Fixing Ltd  
Halfen Limited  
Hanson Cement Limited  
Havscot Ltd  
Hendriks Precon B.V  
Hickman & Love (Tipton) Ltd  
Huntsman Pigments  
Inform UK Ltd  
Inter-Minerals  
Invisible Connections  
Isedio Ltd  
J & P Building Systems Limited  
Kingston University  
KVM Industrimaskiner A/S  
Lanxess Ltd  
Larsen Building Products  
Leading Edge Management  
Leca Danmark A/S  
Leeds Oil + Grease Co. Ltd (LOGCO)  
Longrake Spar Co Ltd  
Loughborough University  
Low & Bonar Hull Ltd  
Lytag Ltd  
Mapei UK Ltd  
Martek Industries Ltd

Max Frank Ltd  
Megasteel Ltd  
Mentor Training Solutions Ltd  
Miers Construction Products Ltd  
Moulded Foams Ltd  
N R Richards Associates Ltd  
National Precast Concrete Association Australia  
National Precast Concrete Association USA  
Net-Temps Ltd  
Parex Ltd  
Patterns and Moulds Ltd  
PCE Limited  
Peikko UK Ltd  
PERI Ltd  
Polarmatic Oy  
Precast Concrete Structures Limited  
Precast Construction Technology Ltd  
Precast New Zealand Incorporated  
Precast/Prestressed Concrete Institute  
Probst Handling Equipment  
Procter Johnson  
Progress Group  
PUK Ltd  
Resiblock Ltd  
RFA-Tech Ltd  
Schöck Ltd  
Search Consultancy  
Sicoma S.V.R.  
SIKA Ltd  
Simply Precast Accessories Ltd  
Spiroll Precast Services Ltd  
Strusoft UK  
Styrene Packaging & Insulation Ltd  
Tarmac Cement & Lime Limited  
Tarmac Trading Limited  
The CPD Certification Service  
Trelleborg Pipe Seals  
Trimble Solutions (UK) Ltd  
UK Certification authority for Reinforcing Steels (Cares)  
University College London  
University of Brighton  
University of Dundee  
University of Nottingham  
University of Sheffield  
University of Surrey  
University of Teesside  
University of the West of England  
University of the West of Scotland  
Wincanton  
Yara UK Ltd

### **MPA Scotland**

Aggregate Industries  
Angle Park Sand & Gravel Co.  
Bonnar Sand & Gravel Co. Ltd  
Breedon Northern Ltd  
CEMEX UK

D Geddes (Contractors) Ltd  
Hanson UK  
Hillhouse Quarry Company Ltd  
Laird Aggregates Ltd  
Leiths (Scotland) Ltd  
MacLeod & Mitchell (Contractors) Ltd  
McFadyens Contractors  
O-I Manufacturing UK Ltd  
Patersons of Greenoakhill Ltd  
Pat Munro (Alness) Ltd  
Tarmac  
Tillicoultry Quarries Ltd  
Tinto Sand & Gravel Ltd  
W H Malcolm Ltd

### **QPA Northern Ireland**

#### **Full Members**

Acheson + Glover Limited  
Alpha Quarry Products Ltd  
Armagh City Quarries  
B McCaffrey & Sons Ltd  
Barrack Hill Quarries  
Boville McMullan Ltd  
Campbell Contracts Ltd  
Carryduff Concrete Ltd  
Colinwell Concrete Ltd  
Collen Brothers (Quarries) Limited  
Conexpo (NI) Limited  
Core Aggregates  
Creagh Concrete Products Limited  
Curtis Concrete Solutions Ltd  
Dalradian Gold Ltd  
Douglas Acheson  
F P McCann Limited  
G & G Ross  
George Crawford & Son  
Gibson Bros.  
Harold Graham  
Hughes Precast Products Ltd  
Irish Salt Mining & Exploration Co Ltd  
Irwins Quality Aggregates  
James Boyd & Sons (Carrnmoney) Limited  
John McQuillan (Contracts) Limited  
Jordan Concrete  
Kilwaughter Minerals Ltd  
Lafarge Ireland Ltd  
Lagan Cement Products Ltd  
Lagan Operations and Maintenance Ltd  
Loughran Rock Industries  
Macrete Ireland  
Matthew Robinson & Son Concrete Products  
McCaffrey Aggregates Ltd  
McGarrity Brothers Ltd  
MW Johnston & Son Ltd  
Norman Emerson Group Limited  
Northstone (NI) Ltd  
Omya UK Ltd  
P Keenan  
Peter Fitzpatrick, Leod Quarries

Premier Cement Limited  
Quinn Building Products Ltd  
R J Mitten & Sons  
Riddles Bros Limited  
Robinson Quarry Masters Limited  
RTU Ltd  
Stanley Bell & Sons Ltd Sand & Gravel  
T H Moore (Contracts) Ltd  
Tobermore Concrete  
Tracey Concrete Limited  
Tullyraine Quarries Limited  
W & J Chambers Limited  
W J & H Crozier  
Whitemountain Quarries Limited

### **QPA Northern Ireland**

#### **Affiliate and Associate Members**

Adcrete (Affiliate)  
Astute Software Applications Ltd (Affiliate)  
CavanaghKelly (Affiliate)  
CDE Global Ltd (Affiliate)  
Cleaver Fulton Rankin Solicitors (Affiliate)  
Close Brothers Commercial Finance (Affiliate)  
ConveyorTek (Affiliate)  
Dennison Commercials Ltd (Affiliate)  
Finning (Affiliate)  
MCL Consulting Ltd (Affiliate)  
Momentum NI (Affiliate)  
Newmill Planning Consultancy Ltd (Affiliate)  
Orica Blast & Quarry Surveys (Affiliate)  
Quarryplan (Affiliate)  
Rapid International Ltd (Affiliate)  
RHM Commercial LLP (Affiliate)  
Six-West Ltd (Affiliate)  
SLR Consulting (Ireland) Ltd (Affiliate)  
TBF Thompson (Affiliate)  
Turley (Affiliate)  
Ulster Industrial Explosives Limited (Affiliate)  
William Orbinson QC (Affiliate)  
White Young Green (Affiliate)  
Atlantic Bitumen (Associate)  
Tennants Bitumen (Associate)

#### **For further information**

- Mineral Products Association: [www.mineralproducts.org](http://www.mineralproducts.org)
- Quarry Products Association Northern Ireland: [www.qpani.org](http://www.qpani.org)
- MPA Cement: <http://cement.mineralproducts.org>
- British Precast: [www.britishprecast.org](http://www.britishprecast.org)
- British Ready-Mixed Concrete Association: [www.brmca.org](http://www.brmca.org)
- British Lime Association: [www.britishlime.org](http://www.britishlime.org)
- British Marine Aggregate Producers Association: [www.bmapa.org](http://www.bmapa.org)
- Mortar Industry Association: [www.mortar.org.uk](http://www.mortar.org.uk)
- Agricultural Lime Association: [www.aglime.org](http://www.aglime.org)
- Silica and Moulding Sand Association: [www.samsa.org.uk](http://www.samsa.org.uk)
- The Concrete Centre: [www.concretecentre.com](http://www.concretecentre.com)
- British Association of Reinforcement: [www.uk-bar.org](http://www.uk-bar.org)
- Asphalt Industry Alliance, in partnership with Eurobitume UK: <http://www.asphaltuk.org/>

## Data sources

**British Geological Survey (BGS)**, 2016. UK Mineral Yearbook 2015. Mineral and Waste Programme, Open Report OR/16/021. Available at: <http://www.bgs.ac.uk/downloads/start.cfm?id=3094>

**British Geological Survey (BGS)**, various years. Aggregate Minerals (AM) Survey for England and Wales. Collation of the results for various years. Available at: <https://www.gov.uk/government/collections/minerals>

**Business, Energy and Industrial Strategy (BEIS)**, 2017. Digest of UK Energy Statistics (DUKES) 2017: main report. Available at: <https://www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-2017-main-report>

**Construction Products Association (CPA)**, 2018. Construction Industry Forecasts 2018-2020. Spring 2018 Edition.

**European Ready Mixed Concrete Organisation (ERMCO)**, 2017. Ready Mixed Concrete Statistics - Year 2016. Available at: <http://www.ermco.eu/statistics/>

**HM Revenue & Customs (HMRC)**, 2017. Aggregates Levy (AGL) Bulletin - November 2017. Available at: <https://www.uktradeinfo.com/Statistics/Tax%20and%20Duty%20Bulletins/agl1117.xls>

**Office for National Statistics (ONS)**, 2017a. Annual Business Survey, UK non-financial business economy: 2016 provisional results. Published on the 9 November 2017. Available at: <https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/bulletins/uknonfinancialbusiness/economy/2016provisionalresults>

**Office for National Statistics (ONS)**, 2017b. Quarterly Labour Force Survey, 2016. UK Data Service, SN: 7985, 8039, 8104, 8145. Available at: <https://discover.ukdataservice.ac.uk/series/?sn=2000026>

**Office for National Statistics (ONS)**, 2018a. Building materials and components statistics: March 2018. Published on the 11 April 2018. Available at: <https://www.gov.uk/government/statistics/building-materials-and-components-statistics-march-2018>

**Office for National Statistics (ONS)**, 2018b. Construction output in Great Britain: January 2018 and new orders October to December 2017. Published on the 9 March 2018. Available at: <https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/bulletins/constructionoutputingreatbritain/january2018andnewordersoctobertodecember2017>

**Office for National Statistics (ONS)**, 2018c. UK GDP(O) Low Level Aggregates. Published on the 29 March 2018. Available at: <https://www.ons.gov.uk/economy/grossdomesticproductgdp/datasets/ukgdpolowlevelaggregates>

**Office for National Statistics (ONS)**, various years. Mineral extraction in Great Britain. Annual minerals raised inquiry survey (AMRI) for various years. Available at: <https://www.gov.uk/government/collections/minerals>

**The Crown Estate**, various years. Marine Aggregates Summary of Statistics. Available at: <https://www.thecrownestate.co.uk/energy-minerals-and-infrastructure/downloads/marine-aggregate-downloads/>

**Union Européenne des Producteurs de Granulats (UEPG)**, 2017. Annual statistics on European aggregates production. <http://www.uepg.eu/statistics>



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The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

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